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REAP Associates, Inc.
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Federal Energy Conservation Programs

Perspectives from the Public and Private Sectors: Volume II

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Public Law 93-577
93rd Congress, S. 1283
December 31, 1974

An Act

To establish a national program for research and development in nonnuclear energy sources.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Federal Nonnuclear Energy Research and Development Act of 1974.
42 USC 5901 note.
88 STAT. 1878

SHORT TITLE

SECTION 1. This Act may be cited as the "Federal Nonnuclear Energy Research and Development Act of 1974".

ENVIRONMENTAL EVALUATION

42 USC 5910.

SEC. 11. (a) The Council on Environmental Quality is authorized and directed to carry out a continuing analysis of the effect of application of nonnuclear energy technologies to evaluate—

(1) the adequacy of attention to energy conservation methods; and

(2) the adequacy of attention to environmental protection and the environmental consequences of the application of energy technologies.

(b) The Council on Environmental Quality, in carrying out the provisions of this section, may employ consultants or contractors and may by fund transfer employ the services of other Federal agencies for the conduct of studies and investigations.

Hearings.

Transcript, availability.

(c) The Council on Environmental Quality shall hold annual public hearings on the conduct of energy research and development and the probable environmental consequences of trends in the development and application of energy technologies. The transcript of the hearings shall be published and made available to the public.

Report to President, Administrator, and Congress.

(d) The Council on Environmental Quality shall make such reports to the President, the Administrator, and the Congress as it deems appropriate concerning the conduct of energy research and development. The President as a part of the annual Environmental Policy Report required by section 201 of the National Environmental Policy Act of 1969 (42 U.S.C. 4341) shall set forth the findings of the Council on Environmental Quality concerning the probable environmental consequences of trends in the development and application of energy technologies.

Volume II

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16. ABSTRACT

The 1981 National hearing on Section 11 of the Federal Nonnuclear Research and Development Act was held July 14 & 15, 1981 in Washington, D.C. The hearing focused on the federal governments' energy conservation programs. This transcript presents the testimony of 88 individuals and groups who testified at the hearing, or who submitted written testimony. Testimony regarding issues discussed at the hearing included energy policy, benefits of energy conservation, state & local governments and private sector activities, successes and failures of federal programs, barriers to conservation and a continuing federal role. A summary of the oral and written testimony is available as Volume I of this report.

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Federal Energy Conservation Programs

Perspectives from the Public and Private Sectors
Volume II

Public Hearing
July 14 and 15, 1981
Washington, D.C.

Program Manager
Gregory Ondich
Office of Environmental Engineering and Technology
Office of Research and Development
U.S. Environmental Protection Agency
Washington, D.C. 20460

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Washington, D.C.

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Office of Research and Development
U.S. Environmental Protection Agency
Washington, D.C. 20460

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FOREWORD

Section 11 of the Federal Research and Development Act (Public Law 93-577) permits an annual public hearing "...on the adequacy of attention to energy conservation methods and environmental consequences of the application of energy technologies." Since 1978 the Environmental Protection Agency's Office of Environmental Engineering and Technology has been responsible for conducting this Hearing.

The results of the 1981 Section 11 hearing on Federal Energy Conservation Programs are contained in two Volumes: Volume I, the Hearing Summary and Volume II, the Hearing Transcript.

This report, Volume II, presents the transcript of the hearing and written testimony from those who could not attend. Forty witnesses submitted oral testimony and forty-seven individuals and organizations submitted written testimony. The Section 11 hearing was held July 14 and 15, 1981 in Washington, D.C., at the Office of Personnel Management Auditorium.

H Wiser
Herbert L. Wiser
Acting Director
Office of Environmental
Engineering and Technology

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J. Michael Power	Director, Policy, Planning and Evaluation Office of Conservation and Renewable Energy Department of Energy
Andrew Glassberg	Professional Staff House Energy and Commerce Committee
John Pfeiffer	Budget Examiner Office of Management and Budget

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Charles Guinn	New York State Energy Office
John Armstrong	Minnesota State Energy Agency
Alan Miller	Natural Resources Defense Council
Mark Cooper	Consumer Energy Council of America
Shirley Sutton	Americans for Energy Independence
Ned Helme	National Governors' Association
Martin Klepper	Lane and Edson, P.C.
David Moulton	Energy Conservation Coalition
Lewis Perelman	Private Citizen

DR. RIEGEL: Good morning. I'd like to convene this Section 11 Hearing, with a welcome to you, to the panelists and to the witnesses.

This activity, which we are conducting for the next two days, has its origins in the Federal Nonnuclear Energy Research and Development Act of 1974. That act requires an annual review of the Federal government's adequacy of attention to both conservation and environment in its energy research and development programs. The review responsibility originally rested with the Council on Environmental Quality but was passed to the Environmental Protection Agency in an Executive Branch reorganization in 1977. This meeting today represents EPA's fourth annual public hearing to review the Department of Energy research and development programs.

From year to year we have shifted the focus of our examination of the DOE programs. For the past two years we have elected to look particularly closely at the conservation component of those programs.

I think it's a particularly appropriate choice this year in view of the fact that the Administration has proposed and is in the process of implementing a number of changes in the government's conservation programs. Changes have included, for example, a de-emphasis of some of the kinds of Federal activities that we have seen in the Department of Energy in the past. I think one of the challenges to the panel this morning, and to the witnesses who appear, will be to examine those changes with a view toward helping us to work together to make them as constructive as we can, so that both the Federal and private sector components of the national conservation effort are made as effective as possible. In addition, we hope that private activities can be assisted and catalyzed toward more effective results for the nation at large.

In the last two years we have seen a rather striking indication of the successes that conservation implemented nationwide can have for the country. Oil imports declined strikingly. One thing that we earnestly hope for is that the signals delivered through higher prices, together with a greater public awareness of conservation opportunities, will allow us individually and in organizations to realize the cost-effective conservation opportunities that remain open to us, not only for the short-term but the long-term as well.

In the next two days, we expect to hear from about 45 witnesses, with additional written statements to be sumitted for the record. This activity takes on a particularly important role in our Section 11 proceedings this year, because we have been unable for various reasons to precede this formal public hearing phase with workshops as we have in the past.

I hope we will be able to pursue three major areas of questioning. First, with declining Federal investment in conservation activities for the coming years, I think it's important that we examine the priorities for utilizing these smaller Federal resources so that they will have the greatest possible impact for our conservation objectives.

The issue is especially important in the state and local area because the Senate and the House both are considering energy block grant legislation to supplant existing categorical programs. The question is how this kind of change can be made most effective.

Secondly, we are interested in learning about private sector programs that are likely to have a significant impact and to take up where the Federal government has left off. Thirdly, we come to a perennial question of how we can best determine the effects of Federal efforts in the conservation arena, how we can best monitor those effects and evaluate them.

I'd like to introduce today's panelists. To my immediate left is John Pfeiffer, from the Office of Management and Budget. He is the budget examiner for the Department of Energy, specifically that part of the program dealing with conservation, and we're very happy to have his presence this morning and his expert view of the DOE budgetary situation.

To his left is Andrew Glassberg, a House Energy and Commerce Committee staff member who is concerned with conservation and renewable activities for that committee. Finally, to my far left is Mike Power, the Director of the Office of Policy Planning and Evaluation in the Department of Energy's Office of Conservation and Renewable Energy. He has the responsibility for a number of the analytical, oversight and evaluation activities, particularly in line with the last points that I mentioned for evaluating the effectiveness of the Federal investment and for keeping a handle on the effectiveness of the private sector activities as well.

Well, I think with no further ado we will go immediately to the witnesses. I am going to adopt the procedure of taking the witnesses two or three at a time, and if the next witnesses will prepare to come after the question and answer period to replace the departing witnesses, we can cycle through the entire list during the morning.

Our first two witnesses are Charles Guinn of the New York State Energy Office, and John Armstrong of the Minnesota Energy Agency, both of whom can bring a state perspective on some of the programs that we're highlighting today.

What I'd like you to do, is to summarize any prepared statements that you have, then add any remarks that you feel are appropriate. After each of you has spoken, we will then turn the proceedings over to the panel to discuss your remarks at greater length. So, Mr. Guinn, if you will start.

MR. GUINN: Thank you for providing the New York State Energy Office with the opportunity to express its concerns about the new directions of Federal energy policy and its impact on state and local governments. This hearing comes at a very critical time for state energy programs because their continuation is largely dependent upon future Federal funding.

Congress' actions on the 1982 Federal budget will determine whether many state energy offices survive and whether government maintains its successful role in fostering energy conservation.

The Administration's dramatic shift away from any meaningful role for the Federal government in energy conservation is most unsettling since it represents a giant step backwards for both New York and the nation.

Energy supply and demand, development of alternate fuel sources and expediting conservation actions need a national focus and a strong federal, state and local government partnership. The Administration's decision to leave the energy conservation field will destroy the healthy partnership among the Federal, state and local governments in implementing energy conservation and renewable resource programs directed to an overriding national goal.

We appear to be returning to the energy policies prior to the 1973-1974 Arab Oil Embargo, a time when the nation was unprepared and completely vulnerable. We saw the United States -- the most powerful and technologically advanced country in the free world -- brought to its knees by a small group of nations, a fraction of our size.

Since that time, it has become only too apparent how inextricably our economy and livelihood are tied to oil-producing countries. This sudden and continuing energy awareness caused by the embargo is a healthy and useful reaction, as long as we respond to this awareness in a productive manner focused on weaning us from OPEC oil.

The Administration's energy policy, to the extent it can be categorized as a coherent set of actions and intended actions, has moved in the direction of eliminating what it perceives as constraints on the production and use of energy.

The policy apparently holds that such actions are necessary to let the energy marketplace function naturally and increase domestic energy production. Certainly, no one can argue against an emphasis on increasing domestic energy production to decrease our dependence upon OPEC oil, help ensure future energy supplies and contribute to domestic economic development. But, where does energy conservation -- the best short term solution to our OPEC dependency -- fit into this production-oriented energy policy?

Energy conservation is at best a tangential occurrence emanating from this policy. The theory is that as the marketplace functions naturally, the rising energy prices -- a direct result of the marketplace at work strategy -- will be a chief impetus for energy conservation.

The government need not be involved in energy conservation, this thinking holds, because consumers of all types will react accordingly and quite naturally to the rising prices by saving energy. I fully recognize that rising energy prices alone can work satisfactorily in many instances as the prime means for promoting and bringing about energy conservation. What we must be concerned about, however, are those situations in which rising energy prices alone will not bring about energy conservation, at least not in an orderly manner or without having a damaging impact.

What are these situations? There are at least three of them. The first situation can be characterized as a market imperfection. It is when financing of conservation improvements for a consumer is not available at reasonable interest rates or the consumer simply cannot afford the cost for the improvement at virtually any borrowing rate.

Under such circumstances, which apply in many instances to small businesses, schools or homeowners, among others, rising energy costs will not result in maximum energy savings. The rising costs will induce the consumer to take action, but the consumer will not have the financial wherewithal to respond fully. Loans at lower than market interest rates, grants or tax credits represent forms of government assistance that are necessary to enable consumers to convert the inducement caused by higher energy costs into conservation actions.

The second situation in which higher energy prices alone will not necessarily result in energy conservation also can be called a marketplace imperfection. It is when a consumer does not have sufficient objective information on which to decide what conservation actions to take. Under these circumstances, a consumer may respond to higher energy cost improperly, in the sense of putting his money into other than the most energy conserving actions, or not take action at all.

In New York State, a case in point is the small industrial sector. Professional energy auditors, consisting largely of consulting engineering firms, generally do not market their services to this sector because it has not proven to be profitable. We have been told that small industrial firms cannot or will not pay a consultant the fee that is necessary to provide energy audits of their plants.

Consequently, these firms, which have little, if any, in-house energy conservation expertise, do not benefit from outside expertise. In many instances, their sources of information consist of representatives of equipment manufacturers who are not very often sufficiently objective.

For such situations, which are just as applicable to homeowners and small retailers as they are to small industries, government-generated programs that provide sound information to consumers are essential. For these consumers, a policy that relies exclusively on higher energy costs to achieve energy conservation will only partially accomplish its purpose.

The third and final situation in which higher energy prices alone will fail to achieve energy conservation is where institutional or marketplace barriers actually prevent the higher prices from working. Examples of this situation are apartment and office buildings. The owners of either building type are typically not induced to save energy by rising energy prices because their rental practices allow them to pass through increased energy costs to building tenants.

As long as the availability of rental space is limited, tenants have little choice but to pay increased costs. This problem is especially acute in New York State. In New York there are 2.25 million multi-family dwelling units representing approximately 40 percent of the state's total housing stock. Energy costs now account for as much as 40 percent of a multi-family dwelling's operating costs, compared to under 10 percent less than 10 years ago.

There are, of course, individual building owners who will make conservation improvements to enhance the viability of a property or for other reasons. Nevertheless, the fact remains that the existing practices of the rental marketplace substantially ruin the clean, theoretical cause and effect relationship between higher energy prices and conservation that the Reagan policy seems to be relying upon.

In this situation, necessary additional actions to achieve conservation should entail mandatory efficiency standards or conservation measures that have the effect of stepping over current practices of the marketplace that otherwise are effective barriers to energy conservation.

New York State, and virtually every other state in the country as well, has been combining Federal assistance from such sources as the Energy Extension Service, the Energy Policy and Conservation Act, and the Schools and Hospitals grant program with state funds to provide programs that address these situations in which rising energy prices alone will not bring about energy conservation.

There are many examples of substantial, cost-effective successes in the use of these funds.

Recently, my office completed energy savings evaluation reports on four of our programs: the Energy Advisory Service to Industry Program; the Boiler Efficiency Improvement Program; the Oil Heat Efficiency Program; and, a portion of the Schools and Hospitals Grant Program.

These four programs alone have saved New York State residents the equivalent of approximately 6 1/2 half million barels of oil per year valued at over $220 million. The evaluation reports indicate that these programs resulted in energy savings which were valued at between 11 and 798 times the cost of administering the programs.

I stress that these evaluations address only three programs and a portion of another. I am sure that the evaluation reports now being done for our other programs will add significantly to the energy savings already calculated.

Notwithstanding the positive, practical uses of these Federal funds, all of the Federal assistance programs for states mentioned above, and others as well, are proposed for elimination in the Federal 1982 budget, with the exception of the Schools and Hospitals grant program for which a relatively small amount of funds has been proposed by the Administration.

Should Congress not alter the Administration's intent, the New York State Energy Office could be forced to reduce its programming and staffing levels by 50 percent. The situation would be worse in many states. To assume that state and local governments will provide replacement funds for the lost Federal assistance is to ignore fiscal realities. Already overpressured state and local budgets simply cannot be regarded as the substitute source of funds for these programs, particularly because the Federal government is also eliminating funding for many other programs.

The specific impact of the Administration's energy conservation policy will be to forego enormous opportunities to save additional energy. The policy will also result in many energy consumers -- homeowners, businesses, and institutions -- not having the objective information and financing necessary for them to take proper energy conservation actions and meet the rising energy costs.

The more general impact of the Federal policy is a backing away from what must be an all-out effort to minimize the country's dependence on foreign sources of energy.

DR. RIEGEL: All right, thank you. Before going to questions from the panel, we'll have testimony from John Armstrong.

MR. ARMSTRONG: I appreciate the opportunity to testify on how the "adequacy of attention to conservation" can be assured, given the new directions in Federal energy policy. I believe this subject is of critical importance to this country and applaud your efforts to investigate it more thoroughly.

There are two important conclusions I have reached in analyzing this question which I believe ought to frame government policy toward energy conservation:

1) Energy conservation can be of major economic, military, environmental, geo-political, and social value to the United States, and;

2) Government has a necessary and essential role in achieving the nation's energy conservation potential. The corollary to this last point, which answers the basic thrust of the Issue Paper, is that reduced government action in conservation will lead to reduction in the overall effort nationally.

In discussing these points, I will try to answer specifically the questions posed in the Issue Paper.

First, it is my strong belief that both the country as a whole and the current Federal Administration has greatly underestimated the value of energy conservation. I believe it is fair to summarize numerous studies which have compared the full range of U.S. energy options to say that improvements in the efficiency of energy use will provide more energy at a lower cost and more quickly than any other option for at least the next 20 years. To quote just one such study: "The United States can use 30 or 40 percent less energy than it does, with virtually no penalty for the way Americans live."1/ (Editor's Note: References follow Mr. Armstrong's testimony.)

The Minnesota Energy Agency has estimated that the net economic effect in the state of a $1 purchase of petroleum products is $.55 compared with $2.21 for home energy conservation.2/

In a similar analysis, Stobaugh and Yergin estimated that the true cost of imported oil to the U.S. was actualy 2.3 to 5.6 times its posted price owing to the negative economic impacts of losing U. S. dollars to foreign countries. 1/

Other studies have shown that an investment in energy conservation will create more jobs than an equivalent investment in energy production. Indeed, "Emerging Consensus," a recent study estimated that two-thirds of the growth in demand for energy services between 1973 and 1978 was met by efficiency improvements.3/ Less studied and more difficult to quantify are the substantial strategic and geo-political benefits to be gained from reduced oil imports.

The net result of all of these factors is that the benefits of energy conservation are greatly undervalued or, conversely, the costs of energy use are greatly underestimated. It is a basic tenet of the new Federal energy policy that if prices are deregulated, the market will bring about the optimal allocation of energy investments. However, even at deregulated prices, many of the opportunity costs of conservation (i.e., the true social costs of energy use) are not internalized into the market price of energy, not to mention the practice of pricing energy to the consumer at its average rather than replacement cost, thus keeping the market price of energy far below its true cost.

The distance between the experienced market price of energy and its true social cost defines an area where the market will not allocate energy investments optimally, and I believe, where governments action is necessary and appropriate.

Government conservation expenditures in areas where the market is not functioning should not be viewed as subsidies, but as the economic purchase of energy at below its true replacement cost.

In addition to the conclusion that there is a sound economic basis for government action where market imperfections exist, the role of government must also be examined where such imperfections supposedly do not exist. The Energy Productivity Center at the Carnegie-Mellon Institute demonstrated4/ that consumers could have reduced fuel consumption by 25 percent and costs by 17 percent given actual energy prices between 1973 and 1978, had they been truly minimizing long-run energy costs.

In Minnesota, a survey of 90,000 utility customers in 1979 found that 55 percent of the homes had less than 6 inches of insulation and 12 percent had none at all (recommended level is 12-15 inches). Of these customers, 45 percent did not turn their thermostats down at night and 9 percent turned them up, even though night-time setback costs nothing and can save more than half as much as attic insulation.

Many studies have documented the substantial barriers which exist to implementing price-responsive conservation.[5,6] Our own studies [7-16] and those conducted by DOE and others (see references) also indicate that most conservation programs have been very cost effective. For example, an evaluation of our boiler efficiency workshops showed a payback on all workshop-associated costs of four months.[16]

The average payback on all costs associated with the Institutional Buildings Grants Program in Minnesota has been 3.2 years, with an annual savings to the state's taxpayers of $16 million.[17]

An evaluation of our energy hotline found that 17 percent of callers were influenced to take conservation action[8] and that 50 percent of those using regional information centers were influenced to take conservation actions.[12]

The central question these hearings address, however, is what impact withdrawal of Federal funds will have on the nation's conservation effort?

First, it must be recognized that the cut in Federal funds is falling, in many cases, on top of substantial state and local cuts. The Minnesota Energy Agency has experienced a 61 percent cut from FY '81 to FY '82 in total funding. State appropriations to the MEA's Conservation Division dropped from $11,966,100 for the FY '80-'81 biennium to $1,180,322 for the biennium which began July 1, 1981 -- a 90 percent reduction. Rescissions and discontinued appropriations in state and Federal funds amounted to over $10 million for the Conservation Divisions last fiscal year alone and almost 90 percent of these funds were grants to local units of government.

Although no data exist on the immediate impact on the private sector, discussions with local engineering firms indicate that business has slowed not only from loss of Federal and state funds, but from disinterest, economic recession, and high interest rates as well. The American Hotel and Motel Association, for example, is discontinuing its 10-year conservation program and many managers have simply decided to pass costs on.

The exceedingly low profile on energy conservation by the Reagan Administration is even affecting the level of interest where grant funds are available. The number of technical assistance grant applications from institutional buildings in Minnesota dropped from 2,000 in Cycle II to only 67 in Cycle III, even though funding levels were similar.

State and local governments are responding in a variety of ways to the withdrawal of funds. One important change has been that conservation funding has shifted "off budget;" that is, from general tax revenue to private investment through bonding. In Minnesota, $11.25 million in direct conservation grants were discontinued, while $27.5 million was approved by the legislature for municipal bonds for residential conservation and $50 million in bonding for district heating.

Second, many groups are increasing their efforts to act cooperatively or to broaden their funding base by forming joint public/private partnerships.

The Minnesota Energy Agency (MEA) has accelerated the rate of transfer of its conservation programs to other institutions. In fact, we have initiated a "foster parent" strategy of finding or creating groups to carry on programs the MEA may have to drop. For example, we are currently trying to establish a Minnesota Chapter of the Conference of Local Energy Officials (CLEO) to continue some of our community outreach and technical assistance functions. We are discussing the establishment of a statewide public/private energy education funding consortium to assume some of the substantial energy education efforts which have been carried out by the Minnesota Department of Education and the MEA.

The process of "institutionalizing" conservation programs by establishing them in groups outside government is not new. Indeed, it is an explicit goal of the Energy Extension Service. Although a benefit of the change in Federal policy has been to accelerate this process, it remains to be seen whether such efforts will be successful.

The process of building energy capabilities at the local level takes time. Direct technical assistance is usually required for a substantial period of time; funding sources must be found and information-sharing networks established. One of the considerable and often-overlooked benefits of the Federal conservation programs has been this institutionalization process. The sudden curtailment of Federal funds will not only stop most current efforts, it threatens years of work the states have put in, which is not yet complete.

As in Minnesota, I believe most state and local governments will not be able to continue functions formerly performed with Federal funds. Conservation programs are likely to be a low priority, and information/education programs in particular; again because of lack of understanding of the benefits of conservation and because of the prevailing sentiment for supply-side solutions.

Even in Minnesota, where conservation is clearly our best near-term option and has widespread support, funding for the development of alternative energy sources was increased from $294,700 to $705,000, this year over last, whereas funds for information dissemination were cut 29 percent.

The loss of Federal and state conservation funds, I expect, will have a slowing on the nation's conservation efforts in general. Information is essential if individuals and businesses are to make the appropriate response to higher energy prices. Such information has been an important contribution of the state energy office and is essential in a period of rapidly changing prices and technology.

Training and education efforts will also diminish, resulting in a less "energy-skilled" work force. Those institutional, legal, and many economic barriers which remain are likely to be removed more slowly because their removal often requires informed governmental action.

The Federal role during this critical period must be to give the states greater flexibility and discretion in order to adapt to local conditions and needs. Rules should be performance oriented and place greater emphasis on evaluation of effectiveness and technical assistance. The formation of information-sharing networks, such as CLEO, the Association of State Energy Professionals, or the Energy Engineers Association should be encouraged and assisted, particularly if the regional DOE offices are discontinued.

Finally, studies ought to be initiated to monitor and evaluate the impact of the change in Federal energy policy and determine if the results truly are in the national interest. Such studies could include case studies of individual states, monitoring of efficiency improvements in major appliances, transportation and industry, monitoring of investments in energy conservation and comparisons of theoretical price-responsive conservation with that actually taking place.

As a society and a government, I believe we have dangerously underestimated the value of energy conservation. The true social cost of energy may, in fact, be many times its market price. If this is the case, the nation's energy problems will not be solved primarily by the American people, as stated in the Third National Energy Plan, but will be solved by forces unperceived and often beyond their control.

To the extent that the market is not and cannot resolve our energy problem, governmental action is a necessary and legitimate means of achieving the broad, national interest.

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DR. RIEGEL: Thank you very much. To open the questioning, I would like to start with one of my own, to Mr. Guinn.

Both of you have suggested that there was some danger that state energy office activities may be in jeopardy as a result of Federal budgetary decisions. I would like to ask you if this is the case in New York? If your office has been successful and has developed a constituency in the state, has that constituency resulted in increased budgetary support for your programs at the state level?

MR. GUINN: The New York State Energy Office was created nearly five years ago, during the late '70s a time when sunset law activity was at its height in New York State. The energy office became the first New York State agency to have a sunset provision in its enabling legislation. I think DOE has a similar provision.

We have just completed our sunset hearing process. We emerged unblemished on the hearing record since there were no negative comments, and considerable praise regarding the wonderful activities carried out. However, our budget in New York State will go before the legislature on April 1. How we get from today to 1982 may somewhat difficult. The second concern is that energy conservation funds, a few million dollars, could be lost between the cracks as the legislature deals with the many programs, most such as health, education and welfare that are much larger, that have been reduced substantially.

There is a certain threshold in the budget process of the number of concerns that one can deal with at one point in time. The New York State budget process and in particular the legislative side of that budget process will have to deal with a great deal of items.

I hope and I feel that we should emerge with increased state fundings from all of this, but there's no doubt in my mind that our programs will be reduced somewhat. I'm not sure in what areas. The degree to which whatever minor Federal money does occur is more flexible than what we've had in the past would help. The degree to which the state legislature provides the money in a flexible form will also help.

Just one aside; in New York we have reached the concensus that conservation is something that we can do for ourselves. We view the rapidly rising energy costs, if nothing else, to a certain degree an attack upon the Northeast and the Midwest. We have industries that unless they conserve energy better than they have, they may not be around. So to some degree that energy conservation may become an element of an economic development strategy in some of the older and colder parts of the country.

A concern we all should have is the final HEAP program and the weatherization program funding levels. I've heard a statistic from New Jersey that the average utility bill in Newark is two months behind. I don't know what a corresponding figure in New York is, but there are many problems that seem to be developing in the payment of bills from the past winter, which was a mild winter. I'm concerned about what will happen in the years ahead and how we can cope with the related problems.

These concerns are just for New York. Now for other states I believe there are some 23 states where the legislature meets every other year and this is the other year.

MR. POWER: Chuck, if I may ask, in your testimony you mention the evaluation of four programs that you've been conducting and just to clarify the remarks, is this a correct interpretation that you have saved, based on these estimates, $220 million a year from these efforts? And in terms of their continuation, are they to be continued as far as you know, and if not, why not?

MR. GUINN: Right. One of the things we found in New York is that the marketplace must work fairly well in the auto transportation sector, convincing people to buy more efficient cars. And if they don't have enough money, they don't drive. So demand declines; but in the building sector the market forces just don't work well.

In New York, where we heat predominantly with oil, as opposed to most of the country which heats with gas, our prices have been in a sense decontrolled for a long time. The difference of oil decontrol versus non-decontrol, especially when our residual oil is 90 percent imported, wasn't all that much. So we've been living in a world of world price energy for some time.

We found in the building sector that the marketplace does't work all that well and it needs some help. Help was found to be useful to small industry, commerical buildings at almost any size, public housing, apartment buildings and other large buildings. We have an Energy Advisory Service to Industry (EASI) program, consisting of a number of retired engineers who work for the state or actually for regional groups across the state, paid for by Federal funds. These engineers go through a small industry day audit and say here's what the firm can do to reduce the demand for energy in its factory. This program, you would think, based on the kind of philosophy of the free marketplace, would be opposed violently by the professional engineering societies of New York. It was not.

It was supported and pushed hard by these societies, who felt that if the EASI engineers can convince John J. Jones of Acme Machine Company that he really needs a heat recovery sysem or whatever change in the process system, we'll design it, but somebody's got convince him. When the vendor for a product goes walking through and says you need to buy one of my devices in order to save considerable energy, John J. Jones Jones may say: "Yeah, and you tried to sell me something else last week." So the "EASI" program has worked well in a fairly narrow, but very important sector to New York's economy.

The boiler program we refer saving 800 times its investment in a year is one which I think a lot of states have. A southern university I think it was Auburn or Mississippi State, developed an excellent program whereby if you can get the right people in a room and convince them that they should do something about improving their boiler systems, they will do it. The difficulty has always been getting the right people in the room.

The market forces may say that you are literally wasting millions of dollars in your institution or your apartment building or whatever, but unless the person operating the boiler knows how to fix it, nothing is going to happen, unless you fire him and/ or bring somebody who can operate the boiler efficiently. This program works because state and local governments can put a fair amount of pressure upon hospitals, schools, public housing, commercial buildings through the local realty boards, and others to send their boiler operators to a class to learn to operate the boilers efficiently. You can bring the right people. They will listen to what can be done, they have a hands on learning experience where they actually do what is necessary.

In the follow-up surveys which DOE makes us do in considerable detail, we found an incredible change in the consumption patterns. Now, I think a free market buff could argue some of the improvements would have happened anyhow, but it certainly didn't happen before we demonstrated what could be done and improvements did happen after the classes.

The third point I'd like to make, I think this has been proven by at least 20 studies, that if you can convince somebody through an energy audit, be it a homeowner, a shopping center owner, that they're wasting money, they will do something to reduce their energy use. Often because of front-end cost limitations they won't do as much as they should,but they will at least do the items that are fairly low cost and also tend to have high payoff.

MR. POWER: I guess I'm still left wondering if this program is that cost effective, would you -- would the state continue to do it?

MR. GUINN: We will find out in April. We will submit to our legislature funding requests to continue those programs that we think are very cost effective. We also will continue a hotline program that basically answers citizens' energy questions. We receive 5,000 or 6,000 calls a month, usually concerned with what can I do to save energy. I've always thought that such programs were very useful in the times of rapidly rising energy costs, to be a shock absorber for the people who are searching what steps to take and how to do them. This is a program that New York certainly would want to continue. Whether it will or not will depend upon the budget processes.

DR. RIEGEL: I'd like to ask John Armstrong a question. John, you argued persuasively that conservation represents a very valuable energy resource to the nation and pointed out that this is being pursued with some success in Minnesota.

On the other hand, you have pointed out that a number of state-sponsored conservation activities and, in one case at least, a private sector activity by the American Hotel and Motel Association may be discontinued. Can you give us your perspective on the extent to which these programs are being discontinued because there's a perception that they have largely achieved the intended results. Also to what extent do you feel that these discontinuances are taking place with a large unrealized opportunity likely to be foregone?

MR. ARMSTRONG: In the case of the Hotels and Motels, I think it is a combination of things. They have been at it for 10 years. They have achieved some results. On the other hand I think there's a great deal more that can be done. So I think there are some fairly large foregone results there; but it's a combination of the mood of the times, lack of interest in energy conservation. For the moment there is a lull in price rises so that the economic pressure is not there and the fact that energy conservation, as for most businesses, is not their primary concern. Their primary concern is doing what it is they feel they make a profit at. One of the very useful functions of many of these conservation programs has been to explain the benefit of reducing energy expenditures in terms that the individuals understand. If it's a profit making business, in terms of an equivalent amount of business they would have to do to generate that amount of profit.

That was one of the ways the Hotel and Motel Association originally got into it and I don't think this is necessarily going to be the case across all sectors.

I still see quite a bit of activity in the industrial sector. There always has been and I think there will continue to be, particularly in large industry. I would agree with Chuck that small industry is quite a different case. But in large industry, they have the capability to analyze their energy consumption, to look at the cost benefits of various modifications; although our general experience is that they will apply a much more stringent requirement on conservation investments than they would in their own business area. For example, we see a six months to one year payback demanded for conservation investment, whereas in the normal course of business they'll look at a 20 to 30 percent rate of return (3-5 year payback) as being pretty acceptable for a general business investment; so there's a bias, even when they have all the data before them, against conservation.

I think in the residential sector, if certain programs are cut, there will similarly be a decline in activity. The private sector won't move in and I think an important point to realize is that the Federal conservation programs which supply information and programs like the RCS provide a basis for private sector action.

I've heard the banking community refer to the RCS program as a transaction cost. They see the whole system of analyzing a home, providing a uniform system of analysis and giving that information to the homeowner, showing him contractors and where to get loans, all as things which take place in order to get the homeowner into the bank to get a loan.

These kinds of programs provide a very important basis for private sector action and for local action. For example, the $27 million in residential municipal bonds that I referred to would not have taken place without the RCS program being in place. Those programs specifically depend upon an audit, a uniform audit, a trained cadre of individuals performing those audits, consumer protection mechanisms and that whole system being in place which any individual city and most states would have a very difficult time developing on their own.

That system is now in place. All the protections and guarantees are there that need to be there for both cities and other lending institutions to be comfortable in lending money on that basis.

Even the IBG program, which provides its own funding source, in a way has an important spillover effect in that the tools generated for the program, the energy audit materials, the training courses and so on again provide a uniform basis for building analysis and for providing financing to institutions and even commercial buildings. There's an important spillover effect in the commercial sector from the institutional building grants program.

Those kinds of effects of these programs are very unanalyzed. Most of the attention by the Department of Energy has been directed towards the immediate payback of a very circumscribed area of impact of these programs. They want to see the actual BTU savings of persons attending a boiler efficiency workshop, and those are usually done within a period of a year after attending a workshop.

There are much broader institutionalizing kinds of effects that I alluded to which are a very important benefit from these programs and I think will be lost if they're taken away.

DR. RIEGEL: Well,as usual, we are suffering time pressure. I would like to thank our first two witnesses for appearing and invite Alan Miller and Mark Cooper, if they are here, to step forward.

We find that discussion has a tendency to go on longer than we allow time for on the schedule. So, to the extent that it is practical for you to summarize your statements, it would be very helpful. If Shirley Sutton could come forward as well, we will add her to the group. Let's begin with Alan Miller from the Natural Resources Defense Council.

MR. MILLER: Thank you for inviting our participation. As most of you know, the Council is a national nonprofit conservation organization with approximately 40,000 members concerned with protection of the environment and conservation of resources. Towards those objectives, we have been extremely active in working towards legislation and grass roots activity in support of energy conservation and renewable energy technologies. My comments will be brief, thanks in part to the creation of a new organization, the Energy Conservation Coalition. The Coalition was created to address one of the problems that we thought to be among the greatest obstacles to conservation, the lack of an organized constituency in support of energy conservation. The Energy Conservation Coalition will be represented, I believe later this morning, by David Moulton. His comments are far more detailed than mine.

My testimony is directed briefly toward two basic issues. One, the question of "market forces" and their relationship to the achievement of energy conservation objectives, and the other to the impact of budget cuts on state and local programs and from our experience as an environmental group, what we see as the impact to date of the changes in Federal strategy. I might note at the outset that there is a distinct difference between the interest at the national level in achieving conservation objectives and the interest at the state level. I think that some of the comments made by the previous panel and some concerns reflected in your questions about differences in state programs and state priorities are due to differences in the national interest in conservation, the national security costs, and the national environmental costs, which are not as clearly responsibilities at the state level.

I think it's important since there are many program decisions still to be made, however, to focus at least briefly on the specific obstacles to capturing all of the cost-effective conservation opportunities. I think this will set the framework.

First, there is the continuing impact of the disparity between Federal support for fossil and nuclear fuels in contrast with support for conservation. It is important to note not only the quantitative significance of such subsidies in the past, which as frequently noted exceed at least $200 billion, but the continuing effect of such subsidies. From a current standpoint, that is more important than the simple quantification of past subsidies.

Unfortunately, there are few such studies of the continuing effect of past subsidies. One that I did discover, by Thomas Sparrow, a professor of economics at Purdue University, has attempted to do so and suggests that past subsidies represent roughly 7 percent of the cost of nuclear power, three percent of the cost of coal, 27 percent of the cost of oil, and 13 percent of the cost of gas. These are current and continuing subsidies which will not be addressed merely by the elimination of current Federal subsidies.

Insofar as the current budget increases funding to various aspects of nuclear energy, of course, this disparity will be maintained. Therefore, one cannot say that completing fuels will be priced on a free market basis.

Second, we see continuing problems because of state control of electricity pricing, which for the most part continues to reflect average imbedded cost-pricing principles and therefore will not reflect the current realities of future electricity costs. Because of this, the Ford Foundation study, The Next 20 Years, noted customers are discouraged from investing in energy conservation or non-utility substitute fuels which may be cheaper than the cost of new supplies.

The third factor is that the end users are often not the ones who are making the investments in the capital which determines energy operating costs. In particular, most buildings are not owner-designed and the builder's incentive is to keep down first costs and minimize his risks.

The buyer can add some, but not all, conservation features later date and only at a much higher cost. We've had some very dramatic data in the last few months indicating the significance of this trend even within the past year. This data was collected by the Air Conditioning and Refrigeration Institute and made available to the Department of Energy by the Carrier Corporation. This data indicates that, excluding California, where mandatory appliance standards are in effect, the energy efficiency of central air conditioners shipped during the last two years has actually declined nationwide. It is therefore clear that even in a period of rising electricity prices the incentive for builders to install more efficient air conditioners has simply not been adequate.

This problem is, of course, also true among landlords and renters. The problem requires government solution. Finally, in preparation for this, I made some effort to survey new homes in the local area. This information doesn't seem to be available very easily, exactly what is happening in the building marketplace. If one simply goes out on a few weekends and looks at buildings, you'lll find the following.

First of all, out of 14 randomly selected developments (I make no claim that this was scientifically selected), I saw only one developer who had labels on the appliances in his houses. In the other cases when I asked about the labels, the people selling the buildings simply claimed ignorance of the requirement that labels be shown.

Second, I found only in the most expensive houses, those in the range of $150,000 or more, any use of overhangs or attention to solar gain. When I asked about this, the sellers indicated no knowledge of the impact of solar gain. They sought to turn my direction toward other features of the houses more commonly asked by those looking at their houses.

Finally, any effort to ask about the likely comparative energy operating costs of buildings (which after all is the ultimate issue), encountered a completely negative response. There's simply no basis for people selling houses to tell you anything more than specific features about the furnaces or water heaters or type of windows that have been installed. I think what was most distressing was the first point, that even those items which are no cost or extremely low-cost items, such as overhangs and proper siding to take advantage of solar gain, are simply not being adopted in the marketplace.

This may reflect what I refer to as our fourth point, and that is the difficulty of finding credible information concerning energy costs both at the residential level and at the commercial and business level.

Evaluating claims of conservation is a time-consuming and technical task, not only for residential consumers looking at houses, but equally so for small businesses and to some extent even medium and larger businesses. One need only review a few issues of the Energy User News and attempt to assess the competing claims of energy conservation companies to understand very quickly the difficulty of making some informed judgement about the value of energy conservation technology.

The Department of Energy has had several programs to address the need for credible information. But in general, the Administration's policy has been clearly that such information should be supplied by the marketplace, not by the government.

We believe that the merit and need for these programs has been amply demonstrated by several success stories, particularly the energy analysis and diagnostic centers which provided basic audit information for small businesses. More than 50 percent of the time industrial users took the advice of the auditors and the savings were 10 times greater than the cost of the program.

Fifth, there is the problem of capital shortage in energy-intensive industries. We note that beyond simple housekeeping-type improvements, which have been predominant in the past five years, conservation improvements require substantial additional expenditure in return for even greater future savings. Knowing this fact, however, is of little benefit for those consumers who lack the necessary funds and cannot obtain the credit. The question is where such funds are going to come from.

The solar bank was an attempt to correct this problem. Again, the Administration's position has been that such programs are not necessary, that tax credits will achieve the same objectives. We believe that tax programs do not address the problems of many low and moderate-income consumers and the IRS returns bear this out. This point is addressed in the testimony of the Conservation Coalition.

Six, we point to institutional and regulatory barriers. We note that conservation -- even when conservation measures are cost-effective and financing is available-- state and Federal regulation often get in the way. We support the emphasis of the Administration on eliminating regulatory obstacles insofar as they obstruct energy conservation efforts, although we haven't seen much evidence of specific programs designed to achieve that end.

I think it was a paper of Mr. Power, in fact, which notes that only further carefully conceived and sharply focused government regulatory reform can mitigate these bottlenecks.

Finally, we would point to those national benefits, environmental, social and national security, which are not reflected in the marketplace. Insofar as these truly are national benefits, I think it is asking a great deal of state and local governments to be as conscious of the need to develop state and local programs to substitute for those at the Federal level.

The second area I want to address briefly is the impact of Federal budget cuts on state and local conservation activities.

The implication of the Administration's approach and, to some extent your questions, is that perhaps if these programs are necessary that they will be picked up by the state and local governments.

We think there is substantial evidence that there will at least be a serious gap between the end of Federal programs and state programs, significant disruption in the continuity of programs, layoffs of experts, termination of programs which have developed expertise and public acceptance.

Given the range of Federal cuts and fiscal pressures facing most state and local governments across the entire array of social policy issues, it's extremely unlikely that most states will be able to so quickly pick up programs terminated in such abrupt fashion by the Federal government.

For evidence of this, I want to point to one program with which I have some direct working familiarity in the District of Columbia. The success of the energy office programs in the District of Columbia, which have been virtually 100 percent funded through Federal activities, has been proven by an energy audit which indicated that these federally funded programs saved the city more than 23 percent in the city government's energy bills, or about $19 million.

Yet, the energy office in the current D. C. Government budget process has so far been very unsuccessful in finding substitute sources for Federal cutbacks. In the absence of Federal funding, even the administration of the Residential Conservation Service, which was likely to require only about 1 1/2 man-years, is very questionable.

The D.C. energy office has become so desperate for funds to administer the energy audit requirements that it has asked the local utility companies, Pepco and Washington Gas Light, to roll in the costs of administering the program in their utility rate base. That petition has been opposed by the utilities. It is currently pending before the District of Columbia Public Service Commission. There are some legal questions about whether the Commission could order it even if it made good policy to do so. But it does indicate the short-term difficulties in maintaining some continuity.

Even if this program is to be picked up later, I think there would be a substantial cost in disruption and in time, if the people who have developed the program leave the city government, if the program is interrupted for some substantial period of time. Regardless of what happens two or three years from now, there will be a substantial cost to the nation in having this disruption imposed on programs across the country.

The D.C. experience indicates another general problem: The allocation of remaining funds among likely activities is going to reflect continuing mandates and legal responsibilities, many of which remain on the books at the Federal level. Despite the broad policy concern of the Administration to eliminate such requirements, these changes in federal statutes may gradually go into effect over a two or three year period. During that time we're going to find that state and local governments are going to be forced to put their remaining funds into compliance with Federal activities. These governments remain liable for compliance with Federal programs like the RCS and it is therefore those legal requirements, rather than any rational establishment of priorities, which will determine the allocation of funds. The most discretionary programs, such as telephone hotlines and information services and long-range planning, will almost certainly be the first to go, something that we've also seen occur in the Federal government.

Federal efforts should continue to focus on information transfer, particularly the transfer of ideas concerning program financing which are now more than ever crucial at the state and local level. Transition difficulties would be needlessly exacerbated if the Federal government simply withdraws, leaving state and local governments with the problems.

Thank you.

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FOLLOWING IS MR. MILLER'S FORMAL STATEMENT

Thank you for inviting the participation of the Natural Resources Defense Council. NRDC is a national, nonprofit organization with more than 40,000 members devoted to protection of the environmental and the conservation of resources. In furtherance of these objectives, NRDC has actively promoted both governmental and private efforts to accelerate energy conservation and the utilization of renewable energy technologies. We have lobbied in support of several of the energy conservation programs at issue in these hearings, and we have carefully monitored their implementation and impact. Because of our belief that these issues have not been receiving sufficient attention nationally, we also played an active role in the creation of a new coalition of organizations concerned with promoting energy conservation, the Energy Conservation Coalition. A representative of the Coalition will also be presenting testimony at these hearings.

My testimony will focus on two basic issues, the assumption that "market forces" are basically adequate to induce businesses and homeowners to adopt energy conservation measures, and the impact of the budget cuts on state and local programs. Our point is not that energy conservation programs should necessarily be immune from budget cuts. Rather we question the philosophical assumptions underlying the allocation of funds made available for energy programs.

I. "Market Forces" Will Not Bring About Sufficient Energy Conservation to Meet National Objectives

Despite the substantial amount of energy conservation activity in the last five years, enormous opportunities are going uncaptured because of at least seven factors:

1. Subsidies to Fossil and Nuclear Fuels. A four-year study by the Battelle Memorial Institute concluded that federal energy incentives for oil, gas, coal, hydroelectricity, and nuclear power amount to more than $217 billion (see attached table). Merely eliminating current subsidies will not redress the effect of these sunk subsidies. An analysis of the Battelle data by Thomas Sparrow,a professor of economics and industrial engineering at Purdue University, estimates that past subsidies represent 7%, 3%, 27% and 13% of the cost of nuclear power, coal, oil, and gas. Since the Administration's budget increases funding to nuclear energy, this disparity in treatment of alternative energy sources is maintained.

2. Average, Embedded Cost Pricing of Electricity. Most electricity rates, and virtually all residential rates, are based on an average of old, relatively low-cost powerplants and much more costly new ones. The utility, but not the customer, sees the true cost of additional units of electricity. The result, according to the Ford Foundation study, Energy: The Next Twenty Years, is that "[C]ustomers are discouraged from investing in energy conservation or non-utility substitute fuels which may be cheaper than the costs of new supplies a utility is adding." The importance of this underpricing is illustrated by a study of differences in electricity use reported in the Wall Street Journal of February 5, 1981. Some of the highest electricity bills were in cities with the lowest electricity rates. The low rates caused people to use electricity "like there's no tomorrow," according to the authors of the study.

3. Builders Don't Pay Operating Costs. Most buildings are not ownerdesigned. The builder's incentive is to keep down first cost and minimize his risk. Since energy conservation is only one of many features of interest to prospective buyers, the demand for conservation is not clearly expressed in the market. The buyer can add some, but not all, conservation features at a later date, and only at a much higher cost. Similarly, most appliances are bought by builders for whom first cost is the primary consideration.

The problem is dramatically illustrated by data collected by the Air Conditioning and Refrigeration Institute concerning the efficiency of central air conditioners. Eliminating data obtained from California, where mandatory standards are already in effect, the energy efficiency of central air conditioners shipped during the last two years actually declined. Central air conditioners are almost always purchased by the builder rather than by the ultimate consumer.

Buildings occupied by renters are a similar problem. the renter has a disincentive to make improvements which will benefit the landlord, while the owner can simply pass on higher energy costs. As a result of these problems, the Ford Foundation study concluded that "the housing market is almost a classic case in which intelligently conceived regulation has a place."

4. Credible Information Is Not Readily Available. Industrial and residential consumers face a bewildering array of claims concerning the economics and performance of alternative conservation investments. Evaluating these claims requires time and technical expertise, both of which can be significant burdens. To make a rational decision concerning the efficiency of a new home requires knowledge of its energy use, current and future energy cost, the likely rate of inflation, the effectiveness of conservation measures, and other technical issues. The Department of Energy has several programs to address the problem, but the Administration sees no need for any of them. The merit and need for these programs is illustrated by the success of the DOE-funded Energy Analysis and Diagnostic Centers, which provide free energy audits for small firms. More than 50% of the time, industrial users take the advice of the auditors and the savings to the firms are equally impressive: a 99.4% rate of return on the total investment.

5. Capital Shortages in Energy Intensive Industries. Once simple housekeeping-type improvements are made, conservation improvements require some additional expenditure in return for substantial future savings. Knowing this, however, is of little benefit for consumers who lack the necessary funds and who cannot obtain credit. This is a problem for low and middle-income consumers as well as many industries. As noted in a 1980 working paper issued by the House Committee on Science and Technology, many companies who would like to invest in energy conservation have either already exceeded their borrowing capacity, are unable to borrow at reasonable rates, or are reluctant to increase their debt in proportion to their equity because of the possible adverse effect on their bond rating. Conservation investments are also considered "risky by many of the sources of debt capital, such as pension funds."

6. Institutional and Regulatory Barriers. Even where conservation measures are cost-effective and financing is available, state and federal regulation may get in the way. Building codes are a classic example; in many parts of the country building codes make it difficult or unnecessarily expensive to install a solar water heater. Summarizing this issue, a Department of Energy strategy paper concludes that "[i]ronically, only further carefully conceived and sharply focused government regulatory reform can mitigate these bottlenecks."

7. Environmental and Social Benefits of Conservation Are Not Reflected in Market Prices. In relation to supply alternatives, conservation measures are clean and create more jobs. They also reduce risks from future supply cutoffs, and increase the overall reliability of our energy distribution system. Some of these benefits, such as protecting a wilderness area, have no market price. Others simply are not well accounted for. For example, the Harvard Business School Report, Energy Future, notes that the cost of electricity from coal neglects many "externalities." "In the mining and transportation stage, the costs include acid drainage from mines and the disruption of life in Western communities by noisy trains hauling coal. The costs are even greater when coal is burned, for it releases sulfur dioxide and a host of other pollutants. The cost include smoggy skies, emphysema,and the (unknown) consequences for future generations of increasing the temperature of the atmosphere by producing carbon dioxide."

II. Federal Budget Cuts Will Seriously Set Back State and Local Conservation Activities

Because of past subsidies, the federal role in supporting state and local energy conservation activities has been substantial. The vast majority of state energy offices, as noted in the Issue Paper prepared for these hearings, receive more than 50% of their funding from the federal government, and in many states essentially all of the funding for energy program staffs comes from federal sources. To expect that states and local governments will immediately fill the breach created by federal cuts is simply incredible, given the range of federal cuts and fiscal pressures facing most state and local governments. Thus, there is almost sure to be serious disruption in state programs. Programs will end, experts will leave government or move into other fields, and the last six years of investment in program development and expertise will be lost.

One need look no further than the District of Columbia to illustrate the likely impact of federal cutbacks. Energy programs carried out by the District of Columbia Energy Office with federal funding have saved the city more than 23% on its energy bills, or $19 million. Yet the Energy Office is so strapped for funds that, in the absence of federal funding, its only hope for sufficient monies to administer the energy audit requirements of the Residential Conservation Service is to require these costs to be borne by the affected utilities. The prospects for this approach, apart from its merits, are poor. Ironically, energy costs are partly responsible for the financial difficulties which have made it so hard for the City to provide the needed monies.

The D.C. experience also illustrates another likely aspect of the budget cuts. The allocation of remaining funds among activities is likely to reflect continuing mandates and legal responsibilities rather than a rational rethinking of priorities. The most discretionary programs, like information services and long-range planning, will almost certainly be eliminated first regardless of their merits.

Federal efforts to continue information transfer--particularly the transfer of ideas concerning program financing--are now more important than ever. Transition difficulties will be needlessly exacerbated if the federal government simply withdraws, leaving state and local governments with the problems.

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TABLE 1. An Estimate of the Cost of Incentives Used to Stimulate Energy Production in Billions of 1977 Dollars

	Nuclear	Hydro	Coal	Oil	Gas	Electricity	Total
Taxation		1.8	4.03	50.4	16.04	31.37	103.64
Disbursements			1.1				1.10
Requirements	1.1	0.03	0.67	41.9	0.06		43.76
Traditional Services			2.31	6.0		0.48	8.79
Nontraditional	15.1		2.68	1.5	0.3		19.58
Market Activity	1.8	13.5	0.02	0.4	0.1	24.73	40.55
Totals	18.0	15.33	9.71	101.3	16.50	56.58	217.42

Source: Battelle Memorial Institute, Pacific Northwest Laboratory, "Incentives to Stimulate Solar Energy Use" (1980)

DR. RIEGEL: Thank you very much. I think we will go through all three witnesses before we open the floor for questions. Next is Mark Cooper from the Consumer Energy Council of America.

MR. COOPER: Thank you, Mr. Chairman, and members of the panel. My name is Mark Cooper. I am Director of Research of the Consumer Energy Council of America (CECA), CECA is a broad-based coalition of major national consumer, labor, farm, public power, rural electric cooperative, senior citizen, urban and low-income organizations. I appreciate your giving CECA the opportunity to contribute to the Environmental Protection Agency's review of Federal energy conservation programs.

CECA has been actively involved in conducting research on many of the issues that you open for comment in your review. In fact, we have recently completed a major study entitled *A Comprehensive Analysis of the Costs and Benefits of Low-Income Weatherization and Its Potential Relationship to Low-Income Energy Assistance.* I respectfully submit a copy of the report for the record. (This report was reviewed, but not included in the Transcript due to its length).

In my remarks today, I will highlight the key points of the study and show how they relate to the broader context in which the review panel is working. The review panel has identified four major policy goals embraced by the Administration and related them to specific energy policy issues. The goals are economic revitalization, enhanced national security, maintenance of the social safety net and fiscal restraint. Given these goals, policy-makers have a number of different options available as a means to those ends. One of the energy policy options, conservation, can work toward maximum fulfillment of these national policy goals. Let us take each of the goals in turn and see how conservation, in general, and low-income weatherization, in particular, relates to it.

ECONOMIC REVITALIZATION

We believe that there are three economic principles upon which an effective revitalization of the national economy should be based:

Anti-inflationary impact: i.e., least cost per unit of energy

Job creation: i.e., most labor intensive per dollar of output

Balanced growth: i.e., stimulating economic activity in all regions and industries, while utilizing a wide range of labor skills

A careful review of the economic characteristics of the various energy policy options shows that conservation is certainly a basis on which to build a rational energy/economic policy. In the CECA study, we found that weatherization delivers energy at a cost between $15 and $40 per barrel of oil equivalent. This makes it a cheaper way to expand the nation's energy resources than any of the production options.

In addition, the energy efficiency option exhibits an extremely high labor intensity, perhaps twice that of conventional fossil fuel production. Moreover, with the moderate skill levels that are required by energy conservation, the conservation option has a tremendous potential for reaching those who are most in need of employment.

Additionally, energy efficiency improvements create geographically widespread patterns of economic activity because they are decentralized and do not rely on specific regional natural resources. Therefore, they avoid massive transfers of wealth from energy-consuming to energy-producing regions. Low-income weatherization, in particular, creates jobs and keeps resources where they are needed most, in the poorest communities of the nation.

ENHANCED NATIONAL SECURITY

With respect to enhancing national security, it has become clear over the last decade that a sound energy policy must be a cornerstone of a strong defense policy. We must reduce our vulnerability to foreign or domestic manipulations of supply, to conventional or nuclear attack, to regional conflicts, or to terrorist activities.

The development of alternatives to conventional sources of supply, such as increased energy efficiency, would serve this goal best. Conservation is domestic in origin, varied in source and inherently decentralized. In the short-term, increased energy efficiency represents the single most promising means of expanding available energy resources. In the long-term, the potential contribution of energy efficiency to the nation's energy needs can be substantial indeed. The National Academy of Sciences estimated that between one-quarter and one-half of our energy needs could be supplied by increased efficiency. Recent studies by the Solar Energy Research Institute, the Oak Ridge National Laboratory and the Congressional Budget Office reaffirm this conclusion.

CECA's study, compiling data on the weatherization of over 6,000 homes, suggests that these prior, theoretical estimates have not been gross overestimates, by any means. We find that energy consumption can be reduced by almost 30 percent with basic conservation measures and more extensive weatherizations can achieve cost-effective reductions in energy consumption of almost 70 percent. Energy efficiency improvements can make a massive contribution to securing the nation's energy future and thereby enhancing our national security. That contribution can reach its potential just as quickly as we desire, by devoting increased resources to weatherization. There are millions and millions of buildings that can make a contribution to the nation's energy supply; they are waiting to be weatherized.

MAINTAINING THE SOCIAL SAFETY NET

From the point of view of maintaining the social safety net, there is absolutely no doubt that conservation must play a crucial role. Energy is a basic subsistence commodity, and low-income households have been forced to devote a debilitating share of their incomes -- as much as one-third -- to this single commodity alone. As energy costs rise higher and higher, there is a serious danger that the economic viability of those American households which live near to the poverty level will be undermined. Energy policy must prevent more and more Americans from being rendered poor by perpetually escalating energy costs, while it relieves the burden that high energy prices place on the poor.

In the long run, if we are to break the dependence of low-income households on the safety net and to prevent more and more Americans from being forced into a dependence on public assistance, programs such as low-income weatherization and the Solar and Conservation Bank, which permanently reduce energy consumption and cut energy costs, must be maintained and expanded. Programs such as these permit households to direct resources away from necessities, such as energy, toward building a firmer economic base within the household and investing in human capital to enhance the earning capacity of the household.

Our study shows that low-income weatherization makes a significant contribution to alleviating the burden that energy costs place on the poor and near-poor. On average, weatherization constitutes an addition to income of almost 5 percent for the average low-income household. That contribution will increase over time as real energy prices rise.

If the goal is to maintain the social safety net which protects low-income energy consumers, an approach which throws low-income weatherization into a non-specific block grant is unacceptable. Such an approach would prove disastrous for low-income energy consumers. Under the Administration's approach, it is possible that weatherization would not be performed at all, since there are no requirements that funds be spent for weatherization. At the very least, weatherization would slow down considerably. Rural areas, where 40 percent of the poor reside, would certainly be underserved.

Thus, for the low-income energy consumer, folding weatherization into a non-specific block grant could mean an increased and perpetual dependence on other means of Federal assistance, such as energy assistance payments for fuel bills. Furthermore, we have accumulated too much expertise in the current low-income weatherization program to abandon it. Folding weatherization into a non-specific block grant would eliminate many of the tremendous benefits achieved by the current Department of Energy program.

FISCAL RESTRAINT

It is obvious that conservation must be accorded the highest priority in energy policy. However, in times of fiscal restraint, policymakers must carefully analyze whether someone other than government can, or will, get the job done. Here we disagree totally with the Administration's point of view. The Administration deems that only high-cost, high-risk, long-term projects are within it purview. This view overlooks the many sectors of our society which are forced to struggle to survive in the short-term.

From the corporate headquarters of the oil companies, a $2000 weatherization and the industry required to deliver it may look insignificant. But, in the reality of the small business sector and the low and moderate-income households of our nation, faced with oppressive interest rates and a massive overflow of resources to the energy industry, the problem appears insurmountable. The poor and near-poor don't contemplate the high-risk, high-technology, long-term future; their risks, which are very high indeed, are in surviving the next winter.

Thus, rising energy prices pose a dilemma for those who would rely on the market to solve the energy problem. At the very same time that rising prices increase the incentive to invest in energy efficiency, they rob households and businesses of the capital to do so. The oil companies are swimming in cash and engaging in an orgy of corporate takeovers, buy-outs and mergers, while the poor and near-poor struggle to scrape together the finances for a simple weatherization.

The evidence on this point, as contained in the Department of Energy's Residential Consumption Survey, is quite clear. The poor are just as likely as the non-poor to undertake no-cost conservation measures, but only one-third as likely to take costly conservation measures. In fact, between 1979 and 1980, the poor reduced their average investment in conservation by 16 percent, while the non-poor increased their average investment by about 2 percent. Capital is the critical constraint in the market.

If one expects the market process to work, one cannot so skew the distribution of resources at the outset as to make a mockery of the very concept of a market and a misery of the lives of those who do not possess resources. We believe that the role of the Federal government is to assist those alternatives and those individuals that are directly disadvantaged by rising energy prices. It must balance the scales, so to speak, so that the balanced pattern of energy development, which is clearly in the the nation's interest can be achieved, and so that the very lives of the poor can be protected and preserved.

CECA makes these observations and arguments on the basis of the single largest review conducted to date on the results of actual weatherizations. Our data base covers over 6000 houses in 25 states and includes data on about one out of every 500 homes weatherized in the Department of Energy's low-income weatherization program. We have applied rigorous cost accounting procedures and stiff economic criteria to the available data. We conclude that low-income weatherization should not only be maintained as a separate program, but that it would be wise to expand it as quickly as possible.

Beyond that specific recommendation, the implications of our analysis for the work of the review panel are clear. We urge you to take your own stated goals to heart, to apply your own criteria on a rigorous basis, to examine the evidence in an objective fashion and, above all, to have the courage to change your minds. Have the courage to take a close and fair look at these programs which you intended to defund or dismantle. Have the courage to find that they are of much greater value than you originally thought. Have the courage to conclude that they deserve a more extensive Federal commitment and demand more Federal resources than you anticipated.

If you do so, you will do a tremendous service to the nation as a whole and to the specific groups which benefit from these programs, the nation's low and moderate-income households. households.

DR. RIEGEL: Thank you very much. Before turning to questions, we have a final contribution from Shirley Sutton from the Americans for Energy Independence.

MS. SUTTON: Mr. Chairman, members of the panel. I am Shirley Sutton, Director of Community Programs for Americans for Energy Indepedence (AFEI), a Washington-based nonprofit public interest organization representing the business, labor, academic, religious and public interest communities. AFEI is privately funded by business and labor.

A major AFEI purpose is to provide public energy information programs encouraging the development of a strong national energy policy of rapid development of our national energy resources and capabilities, including conservation. My comments are based on experiences I have gained as we have worked with many diverse groups and a variety of programs that involved both the public and private sectors.

As AFEI Director of Community Programs, I have coordinated energy education programs with business, labor, and other citizen groups in local communities across the country; directed an AFEI three-year community energy conservation and education program in Pittsburgh, Pennsylvania, including fund-raising efforts, and managed two DOE conservation grants. In addition, I served on the DOE Consumer Affairs Advisory Committee for two years and chaired a task force that evaluated DOE public information programs.

It is from this perspective that I wish to address how the "adequacy of attention to conservation can be assured given the new direction of Federal energy policy." I will confine my remarks to the impact of changes on public energy information programs and residential conservation efforts, particularly those for low and fixed-income persons.

I would like to comment on two of your suggested topics for general discussion that are derived from the Public Energy Discussion Package for the Third Year National Energy Plan (NEP III), and on the general questions you raise, regarding the role of private firms and organizations and Federal, state and local governments in the new Federal energy policy.

The DOE assumption in the NEP III discussion package that "public spending should not be used to subsidize domestic energy production and conservation since this buys us little additional security and diverts capital, workers and initiative from more productive uses elsewhere in the economy" is not shared by AFEI.

AFEI believes that conservation will continue to play a vital national role in directing the country to a more secure energy future. Conservation, in the broadest sense, means using our resources wisely, efficiently and productively. In that respect, it becomes a vast domestic energy resource helping to lessen our dependence on imported oil and saving substantial sums of money. The role that conservation will play as an important energy source is acknowledged by so many respected sources that its importance to the national interest cannot be questioned. Just a few of many diverse sources that confirm the vital role that conservation can play includes: Resources for the Future (Energy: The Next Twenty Years); Consumer Energy Council of America (Analysis of the Costs and Benefits of Low-Income Weatherization); Mellon Institute Productivity Center (Least Cost Energy Strategy); U. S. League of Savings Associations (Energy Saving Ideas in Home Building); DOE Assistant Secretary for Policy and Control (Reducing Oil Vulnerability--1980 Report); various studies by Edison Electric Institute, American Petroleum Institute, Gas Research Institute, Solar Energy Research Institute.

The important question that remains is whether it will be the public or private sector that will ensure the continuation of conservation efforts. Throughout the recent budget cutting process, Administration spokesmen have said that they expect private volunteers and the marketplace to replace many curtailed government programs. This philosophy also appears in the NEP III discussion package. It states that "individuals and firms in the private sector have incentives to produce and conserve energy efficiently."

It may be that the commercial sector will find there is no need for incentives or other government-sponsored programs to bring about massive conservation efforts. I leave that to others who are more knowledgeable in that area. However, residential consumers, and particularly fixed-income residential consumers, do not have sufficient incentives, financial resources or information to make meaningful investments of time or money. Not only do they not have incentives, but our experience in working with the public has shown us that people still are not even aware of the full range of options open to them to save energy and money. For the most part, people do not know of help available to them from utilities, existing governmental programs, social service agencies and other private sources.

Half of our 67 million homes are without attic insulation or storm windows. Reports from the Energy Forum in New England show that impressive inroads have been made in New England, where in Connecticut alone 37,000 energy audits were requested and 23,000 were completed in a program supported by private and public efforts. But audits are just the first step. There are many roadblocks from start to finish in the process of weatherizing homes. People don't know where to get the best materials, whom to hire, how to perform the work, or where to get the money to do the work necessary. Despite the success of the audit program, the New England Forum tells us that many citizens will not receive these services or others. Tenants, elderly and low-income persons are now installing weatherization measures at a rate of 5% annually, only half as fast as the national average. Moderate and upper-income homeowners requested the audit, while poorer and older homeowners did not. Additional help is necessary to encourage these persons to use the services offered.

Who will take on this responsibility? As mentioned, a number of utilities have good programs. Others have programs in the planning stages. We hope that they will continue even though they are no longer required to do so. Some major energy companies support programs of public interest groups. But can utilities, energy companies, the labor community, nonprofit groups, or local governments take on this much needed role without public funds or incentives?

I would like to bring to your attention one government program that has been able to bring together all segments of the community. It is the Community Energy Project of ACTION. Although seed money is provided through government funds, the project involves community volunteers and private investment. Because of this, it is an extremely cost-effective program. The CEP project is designed to launch a community on a "self-help" program that uses all of its resources to provide conservation help to everyone. However, it places special emphasis on low to moderate-income persons. Not only do these persons receive kits of low-cost,no-cost materials and training to go with them, but volunteers are trained to do the work for those who are unable to help themselves.

CEP programs have been demonstrably successful. During a nine-week program, one small Massachusetts community mobilized and 1,728 households saved 14% on their energy bills. ACTION extended the CEP program to more than 18 communities in the State of Massachusetts in 1980 and expanded to 30 in other parts of the country during 1981-1982. However, the program's base funding came to ACTION from DOE. That funding will no doubt be cut. Who will pick it up? Will communities "self start?" Our experience shows that they do not.

Our own community involvement project is an example of how a private program can work. AFEI's Pittsburgh energy education program was privately funded by the corporate and labor communities. It organized all sectors of the community to work together to help the Allegheny County area become energy efficient. The program was highly successful in involving hundreds of organizations and through them, thousands of individuals. However, at the end of three years, funding was dropped due to the press of other commitments and new interests. To date, we have been unsuccessful in locating funding for more programs of this sort in other cities.

As a nonprofit organization dependent upon contributions for survival, we understand how much time, effort - and very hard work - is necessary to persuade contributors to support the activities of such an organization. Fund raising becomes a major time-consuming element of staff operations. I do not believe it will be possible for many nonprofit organizations to mount the necessary effort that will enable them to carry out programs that can substitute fully for the Federal programs that will be cut. Not only will they not have the ability to staff an ongoing fund-raising effort for conservation programs, the money isn't even there.

A recent New York Times article quotes an Urban Institute study estimating Federal budget reductions of $128.2 billion for social welfare, health, arts, housing and food programs. Currently corporate contributions to nonprofit groups only total $2.55 billion. This is a gap that is impossible to fill, even though some corporations are increasing their level of giving. In fact, many corporate leaders are chagrined at hearing continued statements that the private sector can close the funding gap.

AFEI does not believe that the private sector or the marketplace can currently provide sufficient help or incentives to enable enough residential consumers to participate fully in much needed conservation programs.

We do not believe that state and local governments will be able to take up the slack because their funding and program delivery systems are also undergoing radical change. In effect, we do not know, nor do we believe that anyone knows just what is going to happen to many of our residential consumers who have to choose, in many cases, between heat, food, clothing and shelter.

We believe the Federal government must carefully weigh the decisions to cut programs that have shown they are helping people to help themselves conserve energy and money when there does not seem to be a chance they can be replaced.

AFEI has long been critical of excessive government regulation and involvement in energy affairs. We agree that too much public money has been spent on programs that were not properly conceived and administered. However, we do believe there are some roles the government must play where it is unlikely that the private sector will step in.

We would like to suggest that the Administration and Congress monitor the effects of their current budget decisions in terms of the social and financial impact on the residential consumer. To help in the evaluation process and to plan for the future, we suggest a partnership of government, private and public interest sectors, to help residential consumers conserve energy, which is consistent with the national interest.

DR. RIEGEL: Thank you. I will open the floor for discussion now.

MR. PFEIFFER: Mr. Cooper, I was curious as to what activities you expect your member organizations to be concentrating on in this environment of reduced funding at the Federal level, for conservation programs?

MR. COOPER: Well, two activities. One is to continue to do research, such as this report, and to monitor conservation activity. This was done almost entirely from internal resources and since we've released the report I've gotten another 500 or 600 houses from a number of states.

The second activity which we're actively engaged in now is developing a nonprofit public interest energy service company, which will try and go into local communities and see if it can raise resources to fill the gaps we have identified in delivering weatherization to low-income households. We will certainly do the best we can in responding to the reduction in Federal funding.

MR. GLASSBERG: I'd like to ask the witnesses what evidence they have seen that would attribute conservation on the part of consumers or businesses in the market directly to Federal involvement. In the case of the weatherization program you can say that materials were put into a house and you compare the cost-- energy consumed before and after the weatherization took place. But how about for other state and local conservation programs. Can you draw that causal relationship?

MS. SUTTON: I can't quote -- give you figures right now. But I can say that in the Pittsburgh area when we were involved in a program, we worked with school districts. The school districts became aware and involved, not only because of our program, but of other kinds of things that were happening. There are numerous school districts in the Pennsylvania area and all over the country, as there are hospitals and other public institutions that can quote you exact figures of savings that have been realized through programs that they have been involved in. A number of those were programs that were done with some Federal, some DOE monies. These schools, hospitals programs-- and if they're not available or you don't have them, I'd be glad to gather some of those and provide them for you.

That's one sector. Of course the industrial community also has some marvelous stories to tell of energy savings that they have experienced. These are programs that have been done for the most part with their own finances, however, they too are interested in incentives and programs to help them but as far as schools and hospitals, there are some very good figures available in connection with that.

MR. GLASSBERG: Well, that is also sort of a construction program similar to the weatherization program?

MS. SUTTON: A construction program?

MR. GLASSBERG: Yes, in other words you put building materials or conservation measures into a building and can measure energy consumption before and afterward.

MS. SUTTON: That's correct.

MR. GLASSBERG: Okay. Do you have any other--

MR. COOPER: I think that you've certainly hit a difficult point in terms of how you do cost benefit analysis on information programs or education programs, and it would probably only be a decade or two from now when we go back and reconstruct aggregates and sort of take apart every piece of information that was generated in the interim.

Some historian will make some kind of factual historical economic argument and say: "Well, yup, that's where the turning point was." I think a similar problem exists in every program where the benefit is not easily calculable. I mean, what is the benefit of the next battleship? Do we measure it? Would we have peace without it and so forth? What happens in these kinds of situations is that you proceed with a general concept and a general thrust, you observe general results and then much later on you can go back and say: "My God, if we hadn't had that battleship or that fleet or that conservation program things would have been much worse."

You reach conclusions, but to demand precision from information programs and other types of general programs is very difficult.

The other point should also be stated. Where you can get precision, you should demand it. In weatherization programs, in schools and hospitals programs, when you clearly and certainly can identify a shift in policy, and measure its impact, you should be on-ground today monitoring things. Within a year or two or three you can know very precisely whether or not the cost and benefits have turned, whether benefits have been increased or not.

MR. GLASSBERG: But you agree that cost-benefit analysis cannot be applied across the board for conservation programs with any precision.

MR. COOPER: Certainly not in the short term. In the slightly longer term I think you start to construct the possibility of doing so. For instance, suppose next year we institute a building labeling program, which is a remote possibility; but suppose it were to happen. You might well look at the behavior of the building industry over a decade or observe that within a short time lag there was an increase in the energy efficiency of buildings. You will have to have constructed a five-year data base beforehand and a couple years after so that this type of precise cost benefit, profit and loss calculation can be conducted. It still can be difficult for non-specific objectives.

MR. POWER: I hate to promise anything; but partly in response to encouragement from last year's review we have increased efforts to evaluate our programs and we've also instituted an effort to strengthen the measurement of what we're calling conservation indicators. And so hopefully within the next several months we will have much more refined insights into what is actually going on in the marketplace and I hope that that will be a helpful piece of information.

Have you any thoughts about possible tradeoffs within the low-income energy assistance payments program that is run by the Health and Human Services Department?

MR. COOPER: Well, in the study we spent a lot of time developing a theoretical model for how to make the tradeoff, and I do so with a certain trepidation, because I don't think you simply throw the thing into a block grant and let decisions work out. There must be a careful process of fabricating the program. However, there is no doubt that Federal dollars are better spent buying weatherization than paying fuel bills. There may be some who will say that if you don't pay fuel bills, then energy suppliers will be hurt and there is a recycling on that production side. However, I think it's clear enough that the benefits are there.

Second, I think it is possible to manage the program so that you do not have to stop delivering energy services in the short term while you start increasing weatherization services. We point out that a series of sequential purchases of smaller packages of weatherization services is one way to sort of balance cost and benefits for the low-income population.

One of the problems, and I frankly admit it, is that this could be an administrative nightmare. We're talking about three or four trips back to households and program administrators tell me that that's impossible. You may run the administrative costs out of sight. In that case, what you need to do is to have a bigger base to spread the management of assistance in weatherization around. What that argues for is less of a narrow local approach and more of a broader approach, where you can balance off more weatherization with more assistance.

MR. GLASSBERG: I have one question for Alan Miller. In your testimony, you ran through a number of market forces that will not induce conservation to the proper level, such as past and continuing subsidies and state control of electricity prices, etc., and you address these comments primarily focused as a justification not to cut the budget for the next year's program.

How do your comments fit in with the present program, with the past program? Have past conservation programs addressed these needs adequately and if you had your way, how could we reconfigure those programs in a greater or lesser budget situation?

MR. MILLER: That would probably be another set of testimony. I wouldn't -- I'd certainly be the last to claim that the programs as they've evolved have been the best way of doing things. I think I just don't have a real crisp answer to that in a few sentences.

MR. GLASSBERG: Is it okay if he could provide information for the record on that?

DR. RIEGEL: Yes.

MR. MILLER: I'd be happy to do that.

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SUPPLEMENTAL INFORMATION SUPPLIED BY MR. ALAN MILLER

At the July 14th hearing, Mr. Glassberg asked for comment on the extent to which existing programs were responsive to NRDC's concerns and how we would reconfigure programs within the reduced funding levels. NRDC prepared an alternative budget for the environment in conjunction with several other conservation groups. (See attachment). Our budget would have achieved the President's fiscal objectives but would have allocated funds in a substantially different fashion. Specifically, by cutting the Department of Energy nuclear and synthetic fuels programs, we would save sufficient funds to reduce the necessary cuts in solar and conservation. Details are provided in the excerpt attached to these comments.

Given the cutbacks that have been made, we believe more emphasis is necessary on assisting with the development of state and local energy conservation programs. Both technical and financial assistance is needed. The elimination of the Presidential Clearinghouse on Community Energy Efficiency will save very little money and was a serious mistake. Low-income assistance, including the Conservation and Solar Bank, is also a high priority. Regulatory programs, particularly the RCS and appliance standards, will return substantial energy savings for a small Federal expenditure. Research programs, by contrast, offer some opportunity for cuts because many of the firms being funded do not need financial assistance.

ALTERNATIVE BUDGET PROPOSALS FOR THE ENVIRONMENT
FISCAL YEARS 1981 & 1982

Proposed by: Environmental Defense Fund, Environmental Policy Center, Friends of the Earth, National Audubon Society, National Parks and Conservation Association, National Wildlife Federation, Natural Resources Defense Council, Sierra Club, Wilderness Society -- March 18,1981

Solar Energy Research & Development

The DOE solar program is comprised of a variety of component research and demonstration projects. Included in the original $800 million funding were programs to promote wind, photovoltaics, biomass, and active and passive solar systems. These programs have suffered a cumulative reduction of some 77 percent, to $193 million for FY 82.

DOE Nuclear Programs

The DOE nuclear budget contains funds for a variety of programs, ranging from cost-sharing reserach with the nuclear industry to the development of third-generation technology of only speculative impact on national energy security. Many of these programs should be cut in line with the Administration's stated desire to end unnecessary Federal involvement in the energy marketplace. Despite the overriding need to restrain Federal spending, DOE's civilian nuclear programs (fission and fusion budgets) have received substantial increases in the latest budget revisions.

Based on a program-by-program analysis of the nuclear budget, we recommend significant cuts which include: zero-budgeting the Advanced Nuclear Systems program and elimination of the Clinch River Breeder and water cooled breeder programs, neither of which will have any significant impact on the development of world breeder technology, even if they were unsuccessfully completed.

Additionally, an equitable program of budget cuts within the DOE budget requires additional cuts in Magnetic Fusion R&D. Even with full funding of magnetic fusion, no assessment of the technology's potential impact on commercial electric generation is expected to be available prior to 1995.

Although we have not included recommendations for DOE's Defense Activities and Uranium Enrichment programs, significant savings are also obtainable in these areas. For example, stretching out the design and construction of the Portsmouth Gaseous Centrifuge Enrichment facility by one third would save $200+ million. Such a stretch-out is justified by the fact that the construction schedule for the plant calls for installation of centrifuge equipment which DOE itself claims will be made obsolete on Portsmouth's projected opening day (1988), by an ongoing Oak Ridge project which is intended to demonstrate a process which is 50% more efficient.

Additionally, the enrichment capacity of Portsmouth GCEF, projected to cover over $8 billion, will not be needed until well after the scheduled completion date.

DOE Synthetic Fuels Program

There are two primary sources of Federal funding which are supporting the development of a synthetic fuels industry. The "Energy Security Reserve" makes available $17.522 billion for the development of a commercial synthetic fuels industry. This money is to be administered by the Synthetic Fuels Corporation. However, until a chairman and board of directors are selected for the Corporation, part of this money ($5 billion) is being administered by the Department of Energy's "Alternative Fuels Program." The Reagan Administration has recommended that $.3 billion, originally designated for feasibility studies and cooperative agreements, be rescinded, and that the remaining $5.3 billion be transferred to the Synthetic Fuels Corporation, leaving it with a sum of $17.212 billion.

In addition, the Department of Energy's Fossil Energy Program is subsidizing five large-scale synfuel demonstration programs: Solvent Refined Coal I (SRC I) in Newman, KY; SRC II in Morgantown, WV; a Medium Btu Gasification plant in Noble County OH, and Perry County, Il.

The Administration now plans to rescind FY 81 funds for all of the DOE line-item synfuels demonstration projects except SRC II which will continue to be funded for FY 81 because of existing "international agreements." The Administration has also proposed that no money be appropriated for any of the projects in FY 82. The Carter Administration had requested $802 million for FY 82. We support the Administration's requests for these cuts. Additionally, we encourage the rescission of FY 81 funds for the SRC II project. If accepted, the SRC II cut could yield savings of $162 million in FY 81 outlays.

Energy Conservation Programs

The Administration's proposed budget recommendations for DOE's energy conservation programs represent a 77% reduction from levels appropriated for FY 81. Such reductions would effectively cancel major portions of the national energy strategy enacted by Congress over the last four years.

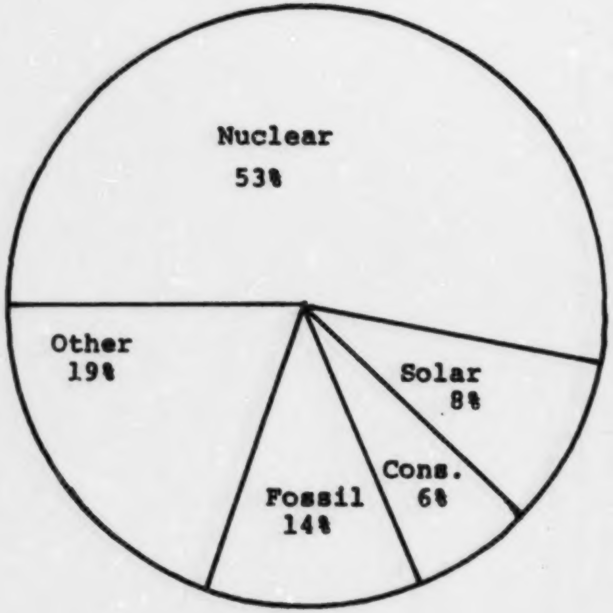
The proposed cuts in programs which are vital to the nation's energy security future are not cost-effective. These programs, unlike many of DOE's long-term R&D efforts, offer an immediate return in terms of energy saved, and of millions of barrels of oil freed for other uses in the economy. Promoting such efficiencies need not, and does not, involve curtailing the end uses to which energy is put, but it does require a constructive Federal role in increasing the efficiency of energy use throughout American society.

The conservation budget of $700 million which we now propose would trim 20% from the Carter Administration's request for FY82. This would allow for the continuation of essential and highly successful federal energy conservation efforts, such as the low-income weatherization program, schools and hospitals program, state conservation planning grants, appliance efficiency standards, and industrial, building and community systems, and transportation research and development.

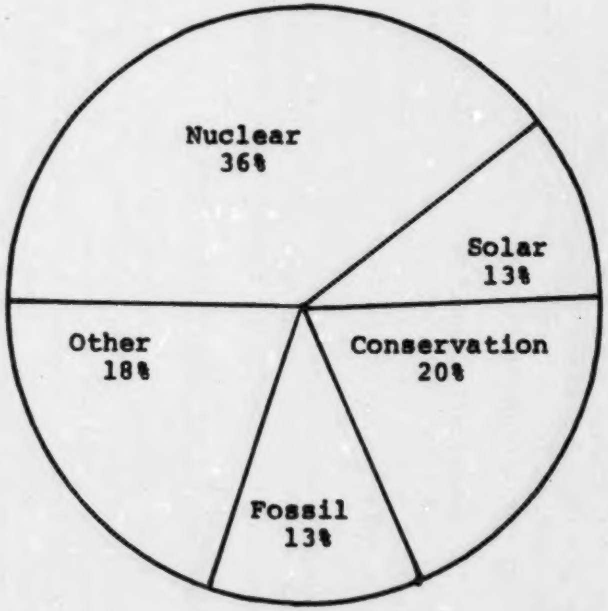
Solar and Energy Conservation Bank

This program, authorized by Congress only last year, has been eliminated in the Administration's revised budget, and regulations will not be issued. FY 81 funding of $121 million for the Bank is proposed for rescission as well. Intended to promote residential, commercial, and agricultural energy conservation and solar energy investments, the Bank would have subsidized loans for such installations to people who could not take advantage of energy tax credits on their income tax because of insufficient income. Only 8% of the nation's homeowners with annual incomes under $21,000 have taken tax credits, according to IRS figures. The bank is thus an essential complement to the energy tax credits if energy conservation and solar development are to be pursued in a comprehensive national effort.

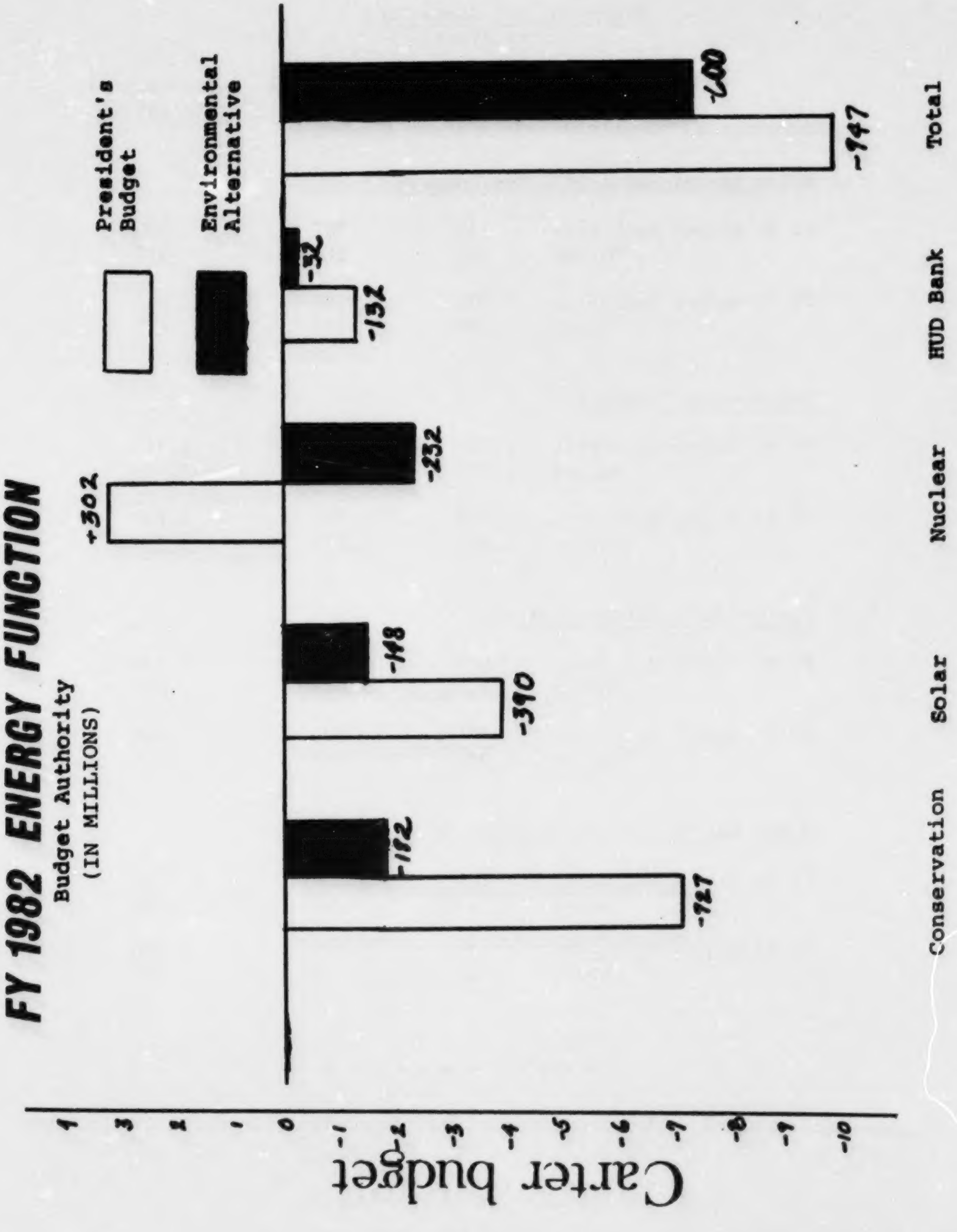
FY 1982 ENERGY FUNCTION



PRESIDENT'S BUDGET



ENVIRONMENTAL ALTERNATIVE


FY 1982 ENERGY FUNCTION
Budget Authority
(IN MILLIONS)
President's Budget
Environmental Alternative
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-727
-182
-390
-148
+302
-232
-132
-32
-947
-600
Conservation
Solar
Nuclear
HUD Bank
Total
Carter budget

Energy Budget Comparison
(in millions)

	Carter Budget	President's Revision	Environmental Alternative
Solar Energy Research & Development			
FY 81 Budget Authority	585	507	583
Outlay	589	510	510
FY 82 Budget Authority	583	193	435
Outlay	589	224	435
DOE Nuclear Programs			
FY 81 Budget Authority	1,396	1,549	1,347
Outlay	1,529	1,679	1,479
FY 82 Budget Authority	1,465	1,767	1,227
Outlay	1,847	1,875	1,335
Energy Conservation Programs			
FY 81 Budget Authority	817	558	700
Outlay	735	663	700
FY 82 Budget Authority	922	195	740
Outlay	990	489	789
Solar and Energy Conservation Bank			
FY 81 Budget Authority	121	0	100
Outlay	47	0	40
FY 82 Budget Authority	132	0	100
Outlay	149	0	125

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DR. RIEGEL: Before asking Ned Helme and Martin Klepper to come forward I'd like to ask you a question, Alan, as well. It's irresistible to use your example of $19 million saving in the District of Columbia Energy Office operation to ask this: If that operation is, in fact, providing so large and so tangible and so valuable a return, how could such an operation be discontinued ?

MR. MILLER: I think the answer to that is the same answer that the Administration is giving in many hearings on the Hill right now and that is that there are other economic objectives to which city and state governments are responsive and political objectives that are often overriding, even when programs appear to be cost-effective and publicly desirable.

My point for the purposes of this hearing is that in the short term those pressures are going to make it very difficult to replace, program by program, all of the services which would be eliminated if all of these people are let go, and I've participated in some of those hearings at the local level. And the situation is that there are many, many programs that are being explained and defended and justified in the same way, much as there are at the Federal level. These are different times at the state and local level just as the Administration is saying at the Federal level and therefore there are going to be some short-term dislocations and disruptions that the city is going to endure.

I think over the long term that they're going to realize that these programs ought to be picked up. But in the short term, there's just no means of suddenly increasing local budgets without major changes in tax policies. The case of the the District of Columbia, as we all know, is unfortunately complicated by the need to obtain congressional approval. So it's not that simple to say just because a rational analytical cost-benefit analysis proves that the program is justified that politically the program is going to be retained.

It doesn't work that way at the local level any more than it does at the Federal level.

DR. RIEGEL: Thank you. Now I'd like to ask Ned Helme and Martin Klepper to step forward, please. Ned Helme represents the National Governors' Association and Martin Klepper is from Lane and Edson. Mr. Helme, would you begin?

MR. HELME: Thank you very much. I think what I'll do rather than read my formal testimony, which will be in the record, I assume to be kept with the permanent file and so forth, I'll just summarize the major points I was going to make and have a little more time for interchange in the time you've got.

I'd start by saying that, as you know, the Governors have been very supportive of the Administration's budget cuts. At the winter meeting in February here in Washington, that was the main source of discussion, the main subject. We came out strongly in favor of the budget cuts and in favor of block grants, but we indicated several areas, and not very many, I think less than five areas in the entire Federal budget, where we felt that the Administration's proposals were not proper and reflective of the needs that we see for the country.

And the only one within the energy-environment area where we indicated that was a problem was the state energy conservation grant programs. We came out strongly feeling that those programs should not be eliminated. We would support some cuts. We favor a cut; we were willing to support up to one-third budget reduction for the weatherization, schools and hospitals and the core programs, with the understanding that we'd move toward a flexible block grant that would give the states a great deal more flexibility to implement measures that were appropriate to that particular state's needs and resources and climate and so forth.

Given that, we've been testifying regularly on the Hill on both appropriations and on the block grant legislation, pushing very hard for the continuation of these programs in the short run and their consolidation phasing into a block grant proposal in the longer term.

There's basically four reasons why I think the Governors identify these programs as so critical and singled them out as a program they'd push for, in contrast to many other programs.

First, I think there's a feeling that as your previous speakers indicated, there are a number of areas that the market simply does not encourage conservation and our feeling is that the state programs in providing technical assistance and in providing information on the various types of measures and so on and the savings that can be achieved with various measures, those kinds of things were a real necessity out there. It wasn't enough to simply say; "Well, energy prices are rising. So therefore we can count on that to take care of conservation and we don't need these programs anymore."

There's a strong feeling on the Governors' part that there were definite sectors of the economy that did not respond in terms of conservation to market incentives.

Secondly, we felt that these programs are significantly cost effective. I know Andy asked some questions of the earlier witnesses about whether you can show any real results. Sure, the brick and mortar programs can show results, but what about the other programs and I think the fact is that they can. There are certainly some programs that you cannot measure effectively in a cost benefit sense. But by the same token there are numbers such as the audits for industrial boilers, small industrial boiler operators, where we can show a significant result and we've got, you know, the Price, Waterhouse. I'm sure John's familiar with these. They're studies that show up to $5 per $1 invested at the governmental level. So we think there's a significant cost effectiveness to these programs. They're not just paper pushing kind of programs as some people have characterized them.

Thirdly, it's our feeling that they're programs that deal with the low income groups and that was addressed very effectively by your earlier panel. Our feeling is that that sector or that group of the economy faces the most severe impacts from fast rising energy prices and decontrol.

The Governors have always been in favor of decontrol, but with the understanding that you take care of the needs of the low income and our feeling is that the state energy conservation programs have moved in the direction of coupling the audits that are done under RCS and they're done under individual state programs with the delivery of weatherization and things like that so that we see a real connection there and a need for the energy office to carry out that sort of function.

Finally, though we're not faced currently with any kind of oil shortage because of the oil glut that we're all aware of, our feeling is that the states have the capacity and that's been demonstrated in a number of GAO studies that have shown that the states have been the key force when it comes to dealing with the natural gas shortage, with the earlier coal strike in '77, and with the '79 gasoline lines and so forth. And we think it's critical that you maintain that basic capacity at the state level to deal with those shortages. The Administration's proposal to wipe out these programs would in essence, wipe out many of the state emergency efforts and I think that's a critical need that while we may not need it this year or next, we'll need it down the road and we shouldn't throw it away now in a rush of budget cutting kind of frenzy.

Beyond that I'd like to give you a little background on the survey we did. It's alluded to in your background paper.

This winter we surveyed all 50 energy offices to get an idea of what effect the proposed cutbacks would have on those energy offices. Twenty-nine of the states are 80 percent or more Federally funded. So you can see right off the bat we're talking about two-thirds -- or 60 percent of the states roughly, would be close to being shut down by the proposed budget cutbacks.

Twelve of the states fall in the category of from 50 to 80 percent Federally funded. The affect there would be not as great but again fairly significant. Only nine states have up to 50 percent of the money provided by the state government itself. So it gives you an idea of these programs that have been heavily Federally reliant. Now, I'm talking strictly about the money that supports energy office staffing and the SECP and EES. I'm not talking about brick and mortar money for bond programs and weatherizing buildings and that sort of thing. There are a number of states that have programs of that sort, but it's a lot easier as you know, from political prospective, to get support in the state legislature for brick and mortar programs. Much more difficult to get something that deals with information, and staffing and so forth.

In addition, it's sort of the picture of how states will fare with this cutoff in Federal funds. I'd have to be direct and say that states are trying to find ways to bring out, you know, to get a little more support from their state legislatures. However, given the timing of these budget cuts, it's very tough to see any real -- I really can't see any real prospect of any significant number of states being able to replace these funds in any timely fashion. We're sure to see a major hiatus in terms of lost capacity, lost staff, if we were to go ahead with the budget reductions in '82 as are proposed.

There are several reasons for this. First, there are 21 states that have biennial budgets. That means they've already put together budget for a two-year period. Unless you can get a special legislative session to go back in and make some changes, it's very difficult to change that and usually that follows the revenue estimates so that you don't have an extra surplus in the second year that you can draw on if you're in the second year of a biennium.

The problem with special sessions I've alluded to is that it can be difficult to get the states to go back in special session. Most legislatures have completed their '82 budget considerations.

Thirdly, to understand the effect of these budget cuts on the states, you've got to look at this within the context of the whole Federal budget. We're talking NGA's estimate is that across the whole range of domestic assistance the Federal budget cuts will reduce Federal aid to states by 37 percent. So when we say well, yes, the states can take over the energy conservation program, we've got to remember that there are many other programs competing at the state level for the same scarce state resources, and while you do have some energy rich states who may well be able to pick up some things, the bulk of the states are in fiscal difficulty at the moment, particularly Northeast and Midwest. They are in very severe economic difficulties. So you're seeing significant cuts even without the Federal cuts. So that to think that well, yeah, the state should take it over and it will happen, I think that's a real fallacy and we can't really expect to see that.

The final part of our survey that I want to allude to is we did ask the states what their priorities were. If they face these kind of cuts, which areas within their programs would they emphasize and interestingly there's a tremendous variation across the board. You couldn't pick one single program and say, everybody wants to do this. It was -- it really varied with the climate, with the situation, the particular resources those states had.

Personally, we felt was a real strong argument for the block grant because it points up the fact that in the Northeast the weatherization program is clearly the key issue because you've got heavy dependence on oil, high and low income population, rough winters.

In the Southeast and the Southwest you've got a position where they're looking more at the agricultural sectors as being the place where they can make tremendous savings in conservation, more cost effective. They probably put more money into that area. So we did not find any single area that you could pencil in and say all right, this is the one thing the Federal government should continue to support because that will cut across all the states.

Our clear finding was that, in fact, making the money more flexible and letting states target it made much more sense.

I guess the final point I'd like to make to you is that these programs have been around roughly I guess six years now. The states have done a lot of planning under the programs and a lot of assessment of where the needs are for conservation, that sort of thing. It's our feeling that this would be the wrong time to be cutting off these programs, that we're now at the point where we don't need to do as much planning. We know where the sectors are that we can make the real savings and it would be a shame to cut it off at this point when you're really getting down to implementation, getting involved in the local governments and the program, that sort of thing. So I guess that concludes my presentation -- I didn't mean to be quite so long-winded, but that summarizes my remarks.

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FOLLOWING IS MR. HELME'S FORMAL STATEMENT:

My Name is Ned Helme and I am Director of the National Governors' Association Energy and Environment Program. I appreciate the opportunity to testify before you this morning on behalf of the National Governors' Association.

Before addressing the specific questions posed in the Issue Paper issued in June for this hearing, I would like to present the general position of the Governors regarding the proposed changes to the state conservation grant programs.

The Governors met in Washington in late February for their winter meeting. The focus of this year's meeting was on the Administration's proposed budget cuts. In a major resolution, the Governors supported budget reductions and block grants.

At the same time, they set forth certain priority budget items where they differed with the Administration's proposals. In energy and environmental programs, the Governors identified the state conservation grant programs as the only area where they opposed Administration proposals to eliminate most of these programs. NGA has suggested instead consolidation of the existing programs into an energy block grant with 1/3 less funding then was available in FY 81. An energy block grant would allow states to direct dollars to the measures which would be most cost-effective in that specific area.

The Continued Need for the State Conservation Program

The Governors have selected the continued funding of the state energy conservation grant programs as our top priority for the following reasons:

o First, in a world of rapidly rising energy prices, state and local governments have served as the primary delivery mechanism for information and technical assistance necessary to consumers in taking energy savings actions. Although rising energy prices have increasingly motivated companies and individuals to seek energy conserving methods, many consumers do not have either the front-end funds or accurate information necessary to undertake cost-effective energy savings actions. States, through the State Energy Conservation Program (SECP) and the Energy Extension Service (EES) have been responding to these needs. Over time, these same programs have been drawn upon to provide support for additional federal initiatives such as the Residential Conservation Service Program and the Energy Emergency Conservation Program.

o Second, these programs have proven themselves cost-effective. Numerous studies have shown five fold or greater returns for every governmental dollar invested in the state programs.

o Third, state-administered programs have targeted assistance to low-income individuals who feel more intensely the burden of rapidly rising energy costs. States are now moving to couple home energy audits under the Residential Conservation Service Program with the delivery of low-income weatherization.

o Fourth, the states have acted as the first line of defense in responding to fuel shortages. It is crucial to the health and safety of the people of this nation that the capacity at the state level to deal with major oil supply disruptions be further developed and maintained.

A further description of the state grant programs and examples of state efforts are included in the fact sheet attached to my testimony.

Impact on the States

I would now like to describe to you the results of a recent NGA survey on the impact of the proposed energy budget cuts on the states. NGA conducted a survey this winter of the impact of proposed federal budget cuts on state energy programs. The survey results indicate that the total withdrawal of federal support for FY 82 as proposed in the Administration's budget will severely impact the states' ability to carry out conservation and emergency programs.

As noted in the EPA Issue Paper, the majority of states indicated that their energy offices were 80% or more federally funded, with the bulk of federal funding coming from the SECP and EES programs. Twelve state offices were between 50% and 80% federally supported, and nine states indicated the energy office was 50% or more state supported. As these figures indicate, there is a strong likelihood that many state energy offices could be closed if federal funds are eliminated in FY 82. Functions may, in some cases, be picked up by other state agencies. In many cases the functions will be eliminated altogether.

In response to potential cuts, many states are attempting to rally support for state funding for continuation of priority conservation activities. It appears unlikely that many states will be able to provide any significant support in FY 82 to replace federal dollars for the state energy office activities. In our survey, states cited major problems with the timing of the withdrawal of federal funds. Most state legislatures have already completed consideration of FY 82 budgets. Even if a state had sufficient revenue to take over financing of the programs, it would be unable to do so unless a special legislative session were called. In addition, twenty-one states have biennial budgets. These states would have even greater difficulty in obtaining state support to replace federal funds. States are constitutionally required to maintain a balanced budget and a number face limitations on annual increases in spending. Finally, states are being asked to absorb significant federal cuts across the board (estimated to total 37% of FY 81 federal appropriations to states) including major cuts in social services and transportation and, in some cases, face their own severe fiscal difficulties.

State Priorities

The NGA survey questioned the states on their priorities given the proposed federal cuts. Most states indicated that they are currently assessing their priorities and reevaluating the programs. Final decisions on priorities will depend upon the final level of federal support. Responses also showed that when these priorities are finally chosen they will vary a great deal among states. Priorities mentioned included low-income weatherization, general conservation activities, residential conservation programs, transportation conservation, schools and hospitals, renewable resources activities, emergency preparedness, and assistance to local government.

Current State Conservation Efforts

The EPA Issue Paper requested additional information on state and local conservation activities. In the past the NGA has published a number of reports on state conservation activities. Our most recent published report is "Ensuring our Energy Future: State Initiatives for the 80's" which I am submitting with my testimony. (This report was reviewed but not included in the Transcript due to its length). In January of this year, we began to assemble an information bank on state energy programs collecting summaries prepared by states of their activities and other relevant reports and documents. We are currently working on compiling this information into a useful fashion. Examples of these state measures are included in the attached fact sheet on "Energy Conservation in the States."

Once again, I want to thank you for the opportunity to testify this morning. I will be happy to respond to any questions you might have.

DR. RIEGEL: All right. Thank you. Mr. Klepper.

MR. KLEPPER: Thank you very much, Dr. Riegel. My name is Martin Klepper. I appreciate the opportunity to testify today.

I am an attorney with the Washington, D. C. law firm of Lane & Edson, and have been working for the last four years in the field of energy conservation. I've been working on behalf of both public and private sector clients.

We've been working with some major national underwriters in developing tax exempt bond programs to finance energy conservation. We've been working with leasing companies and companies that are called equity syndicators that are interested in raising capital for energy conservation purposes.

We've been working with a variety of state and local governments in the public sector. We recently completed a study for HUD in cooperation with the New York City Energy Office, looking at financing opportunities for small and medium sized industry in New York City that wanted to undertake energy conservation measures.

We've done work with the State of Massachusetts, with the National Association of Counties, the National Association of State Legislatures, primarily in the area of assisting them in identifying financing mechanisms for energy conservation program.

I've had a unique opportunity as well, by serving as chairman of an Energy Law Committee of the American Bar Association in the Section of Real Property, Probate and trust law, to talk with attorneys throughout the country who are dealing with the same issues, and while I'm appearing here today in my personal capacity and not as a representative of any client, the comments that I'm going to make and the suggestions are the kinds of suggestions that I think would be of extreme help and assistance to the variety of both public and private sector groups that we've been working with.

I've tried to give these clients a message and that's the message that private sector financing can work. I'm going to be talking today only about the financing of energy conservation.

It can work, but there's a lot of assistance that's needed and it's a long road to go before we're going to have very active involvement of the private sector in financing energy conservation.

I'm going to suggest for your consideration six very specific types of legislative changes that I think would make it an awful lot easier and that would facilitate private sector financing for energy conservation.

These deal with leasing, tax exempt financing, the establishment of energy service companies, assistance in utility involvement in financing energy conservation.

There's a willingness that we found on the part of local government to solve the energy conservation problem. I think that state and local government is probably far ahead of the public, both private and business sectors, within the country in terms of recognizing the savings potential, recognizing the benefit to their community from energy conservation. It's a little bit of government pull rather than demand push in terms of government willing to take some steps to encourage the private sector activity in energy conservation.

We found that local government generally doesn't have the expertise in the financing area. Those individuals who are responsible for energy planning at the city, county or state level often are not well versed and well schooled in the mechanics of tax exempt financing or government municipal finance. They don't have the resources to retain the kinds of financial consultants that they might be able to afford if they were financing a $100 million nuclear facility. They don't have the support either from Federal funds or from state funds. Finally, there's really no direct working relationship that's been established between the energy offices, between the people who are responsible for energy planning at the local level, and the financial institutions in the community, the banks, the insurance companies, the underwriters, even the utilities.

In some communities, they're starting to develop those relationships. The energy offices are going out and trying to talk with the financial community, but that is a very long, slow process.

Business, for its part, is really not interested now on a relative basis in involving themselves in energy conservation on the local level. When I say local, I'm talking about loans or providing financing for $2,000 or $2,500 worth of retrofit for thousands of single family homes in the city or for dealing with the problems of multi-family buildings or a large number of nonprofit buildings within a community. If they have an alternative, private financing firms will use their time, effort and resources to finance a $50 million gasohol facility or a $30 million hydroelectric plants.

In terms of the return on investment, on their investment in those projects, private firms are much more interested in the larger projects than the smaller ones. So that even though on an economic basis you can look at any energy conservation investment and determine that it's extremely cost effective, that it has a very high rate of return, that it's a rational economic investment, it's unlikely that that alone is going to be enough to entice the financial community to actively and aggressively pursue the energy conservation market.

In working with some of these companies, we've come across problems, if you will, in Federal legislation that make it very difficult even for those companies that are interested and willing to take fairly significant risk in trying to develop financing in the energy conservation area. The suggestions that I'm going to make - I think are all consistent with the Reagan Administration's approach, which is to let the private sector provide the financing. But I think there's a need to assist local and state governments, loosen some of the tax law provisions, for example, so that local and state government have the tools where they show the interest and the initiative to act on their own to create financing opportunities.

For example, in the leasing area there are a number of restrictions on the use of leasing that prevent a company that wants to lease energy conservation equipment for a building from obtaining the tax credits that would otherwise be available. There's a limitation, for example, that the lease term cannot be more than one-half of the useful life of the equipment. Well, it is very difficult for a company that's buying a boiler with a 15 year life to lease that boiler on an economic basis to a property owner if the lease cannot exceed seven and one-half years. If the lease is for more than seven and one-half years, the owner loses the tax credit and the tax credit will probably be an important inducement to that type of activity in the first place.

So that even though the tax credit exists, because of the restrictions on leasing, those tax credits cannot be used by private financial institutions to provide the capital that the property owner might not have.

For a property owner who doesn't have the capital, the tax credit is meaningless. He cannot obtain the credit if he doesn't have the capital to buy the equipment.

There's a provision called the at risk limitation that the Administration is proposing to impose on leasing. That, I think would further delay, if not prevent, the implementation of leasing for energy conservation because it would make it that much more difficult to raise capital from the private sector to be used for leasing energy conservation equipment.

With regard to tax credits, one area that our firm has spent a lot of time looking at is the area of multi-family housing. There is virtually no Federal incentive available for energy conservation in the multi-family housing sector. A bill has recently been introduced in the House by Representative Schneider from Rhode Island that would provide a 20 percent tax credit for multi-family property owners. I think that would be a very important incentive in giving them the first step, the step that they need to encourage energy conservation investment.

I think it's important that the existing tax credits have their termination dates extended. That's probably not high on anybody's agenda right now. But in terms of business planning, in terms of enticing private financial institutions into energy conservation, if they look at tax credits that expire in 1982 or 1985, and that's an important incentive for their investment, and they expect it to take a year or a year and a half before their program is established and on its feet, it's unlikely they're going to want to make that investment if the tax credit is going to terminate in another two years and if they don't have some assurance it will continue.

Tax exempt bonds are one of the most attractive means of financing energy conservation because they can provide much lower interest rate loans to property owners over a much longer term than is available from bank financing or from any other alternative source.

In trying to structure tax exempt bond programs I'm talking now about a revenue bond, not a general obligation bond, a bond program that would not rely on the full faith and credit of the city but would rely solely on the security that would be behind the bonds. There are a number of problems that have been raised primarily by the Mortgage Subsidy Bond Act, also known as the Ullman Bill. That law, among other things, permits energy conservation bonds to be issued for loans to single family homeowners for energy purposes, but it restricts those bonds in a number of respects. The restrictions were really intended to be restrictions on single family mortgage revenue bonds not on energy conservation bonds. But energy conservation bonds are included under the definition of a home improvement loan. Therefore, the Mortgage Subsidy Bond Act limits the amount of bonds that a city, that a state or that a county can issue. On policy grounds, even at the time the legislation was enacted, I don't think that it was the intent of Congress to restrict a city's ability to use tax exempt bonds for energy purposes.

The limits in the Mortgage Subsidy Bond Act that ought to be changed include the overall state limit on the amount of bonds that can be issued. It seems to me that any bonds that are issued for energy conservation purposes are in the public interest, particularly if they are saving energy, or if they are conservation measures that result from recommended RCS measures.

There's a limit on the issuance of multi-family bonds that requires that the bond proceeds only be used for apartment buildings that have 20 percent low income tenants. Well, that might be a rational limitation when you're dealing with a mortgage revenue, bond, but when you're dealing with energy conservation, if it's in the national interest to save energy in a low income building, it's also in our interest to save energy in an upper income building.

Finally, there's a prohibition on taking tax credits if you use the proceeds of revenue bonds. That might again have made sense in connection with certain types of energy investments, but I don't think it makes sense in connection with the energy conservation investments.

And in the industrial sector, industrial development revenue bonds can be used to finance energy conservation for industry, but the problem is that there's a limit -- called the small issue exemption -- which makes it very hard to structure a bond issue with a lot of $50,000 or $100,000 energy conservation items. The size of the bond issue is too small to warrant or justify the interest of the financial institutions. If the law were simply changed to permit an aggregation of 20 or 30 specific projects in one bond issue, then you would have underwriters interested in providing the capital, raising the funds for these types of loans.

In the multi-family sector, Congress required HUD to adopt an insurance program, a loan insurance program. HUD came out with regulations called the Section 241 program last August, but they have not issued guidelines to their regional offices so that that Federal insurance program for multi-family buildings is not effective and cannot be used.

We have a couple of clients who are interested in setting up energy service companies. One of the problems that they face is the possibility of being regulated as a utility. If they go into the business of providing the heat, light and electricity in a building and they're willing to pay all the costs of installing energy conservation measures and they're willing to take the risk that their measures will be effective, they still may not be able to do that in some states because they'd be deemed to be utilities and they'd be regulated as a utility.

I think that the Federal government can help support some of what I call long term research and development in developing some of these financing techniques. We now have all the technological answers that we need for energy conservation. We already acknowledge that energy conservation is a relatively riskless investment, that the technology exists and yet the infra-structure, the technical advice, the models for financing some of these investments do not exist and that ought to be just as much within the category of research and development in terms of use of DOE funds as designing the answer to energy conservation in buildings 10 years down the road when no one has the mechanism, the means of paying for those measures that were designed or invented 10 years ago.

Finally, in terms of a broader Federal role, I'd like to suggest that there's a need for a corporation like the National Corporation for Housing Partnerships which was created by Congress back in 1970 to provide a mechanism, a model, for financing low income housing production. That same model can be used to create a national corporation for energy conservation, a separate nonprofit corporation. It would only need Federal funding to get on its feet and to get started. That corporation would have the flexibility and the ability to raise private capital through a stock issue, or through an issue of limited partnership interests. It would go about creating the mechanism, creating the models and demonstrating to the financial community that energy conservation is a viable valid investment of their time and resources.

The National Corporation for Housing Partnerships is now a completely independent, very successful corporation. There are literally hundreds, if not thousands of real estate limited partnerships that are used to finance low income housing in the country, all modeled on work initiated by NHP.

The second alternative for a broader Federal role is to create a regional corporation for energy conservation, something like TVA or BPA, in those areas of the country where they don't necessarily have the same need for the supply of energy or the control of energy that TVA and BPA have, but where they have similar needs in terms of utilizing their resources to save energy, to upgrade the efficiency of their plant, of their equipment and of their buildings.

New England is a prime example of an area that I think needs that kind of regional cooperation and support that could involve both public and private sector financial assistance.

Thank you.

DR. RIEGEL: Thank you very much. Questions and discussion?

MR. POWER: Just to comment and ask a question of Martin Klepper. We have been working on the financial implications of conservation more in recent years. We've I think finally gotten some recognition that the size of investment, if you will, is much greater in energy conservation that it is in energy production in the U. S. If you consider items, such as consumer durable goods which produce a stream of services like an automobile or refrigerator, as an investment -- and I think this is a new look, a new way of approaching conservation -- it gives a different perspective and I think that your comments are very well received. I'd really enjoy a chance to chat more about that. I think that the question being how we can examine some of these specific changes and DOE is looking at some of these.

I think in the context of current Administration philosophy, we are looking at ways, new institutional ideas. So specific suggestions would be very, very much appreciated.

I think that in terms of where we go, we're trying to create specific investment calculations in our procedures so that decision makers will have a better idea of what can be achieved by conservation. From your experience, do you have any specifics as to why some of the conservation measures that look so good in terms of the engineering analysis or the financial analysis, aren't undertaken by the private sector? I assume that you're saying it's not just the fact that the investments need to look better, it's -- there's also something beyond that that's holding things up.

MR. KLEPPER: There are a range of reasons that people don't install energy conservation measures, and it depends, I mean there are different reasons for different sectors. I will be happy to submit for the record the report that we did for HUD in which we identified the barriers to energy conservation in the industrial sector and they ranged from little things like the fact that the plant manager who's responsible for energy conservation, looks bad if he can recommend a million dollar savings because the question is why didn't he recommend it last year or, why is there that much waste in the plant. Yet he's the person with the technical knowledge who's probably going to be approached by the person selling the equipment and he's the one who understands the potential savings. (This report was reviewed, but not included in the Transcript due to its length).

There's a lack of incentive in the industrial area on the part of the corporation because there are competing demands for capital. The employee who wants to expand his shoe sales department by adding three new people or by building a new wing to the office building to support his expansion doesn't have any greater empire if there's energy conservation, even if conservation produces dollar savings which drop immediately to the bottom line profit.

There are a whole range of similar reasons that apply to the multi-family area and the single family area. If you talk to the people in Oregon where they have the zero interest loan program they tell you that they only had 60 percent -- or something like a 60 percent -- response rate. They went out and performed 100 audits and said: "Here's the energy savings that we recommend. We'll install this basically for free. We'll only ask you to repay the principal at the time you sell the house, no interest." And only 60 out of 100 people signed up. They couldn't believe it. It reminds me of the statement that if you stand on 42nd Street and 5th Avenue, and hand out $1 bills, a lot of people are going to walk by and not take one. There are a lot of hassles involved in applying for a loan, finding the right person to give you the loan, meeting the different credit requirements of different institutions. The loan is only one part of it. Letting somebody you don't know come into your house and spend two days drilling holes in your walls or up in your attic, et cetera, is another hassle. We need to overcome a lot of those barriers and economic incentives is one way to do it without forcing people to do it, without mandating conservation by the Portland approach.

DR. RIEGEL: I have a question for Ned Helme about the provision for emergency response or crisis management events that we have had to contend with in the past and that I think all of us realize could recur if conditions were right.

Many of the states, of course, did go through very severe energy emergencies. Is it your feeling that this experience is somehow insufficient to motivate the states to act unilaterally to provide for contingency arrangements?

MR. HELME: I think the problem is a problem of timing in terms of the funding and that's why I alluded to the difficulties in the phasing of this decision. I think, in fact, that many states would rate the emergency preparedness part of their operation high on the list of something they'd want to preserve. But as a good example, when the Administration in March repealed the existing allocation rules and repealed the state set aside program which gave the states five percent of the fuel to allocate and so on, a number of states lost their allocation officers, immediately lost the authority and people left. There was a real morale problem for the states in a number of programs, not just this program. Where there's a perception that this is all going to go away and nobody thinks it's important anymore, you start to lose the top people and something like that, dealing with emergencies is a function of a small group of people who really know the business, know the industry contracts, can get the fuel where they need to get it in an emergency, understand the coal industry in the case of a coal strike, that sort of thing. So it's really staff, it's people that you're talking about and there's a problem in keeping them when the money dries up essentially.

It's not a great cost, I'm not going to say it's $100 million to do that job but it is difficult to maintain that funding and just as you know how complex it is here in terms of the Federal budget, when once the cuts go through, it's very hard to turn that around. It's the same situation at the state level or the state legislature. Once they act on the budget it's very hard to turn it around, if they assume that they're going to have Federal money to pay for those people and in many cases they do.

DR. RIEGEL: Thank you very much.

MR. GLASSBERG: Just a minute, I want to ask another question.

DR. RIEGEL: Oh, yes. Go ahead.

MR. GLASSBERG This is for Ned again. You mentioned that the state grant programs have been around for about six years now. Originally they were intended to serve very specific purposes. It seems that those purposes have either been served or there's been a move away from those directions. Could you comment on how the directions in which the program has moved in -- have they been good directions, do they need to move in other directions that they haven't moved in, could they --

MR. HELME: I think they have been good directions and you're right, they have moved. There are some programs that added things like procurement and right turn on red, all those things that have been done essentially. As I said earlier, it laid the groundwork, the planning. They went out and they looked at all the sectors where they could make conservation improvements and I think what you find now is that states are focusing their attention on pieces of that that have the best payoff, the most cost-effective payoff.

Beyond that I think the renewables area is one that has only been addressed by a small number of states. It's not really part of SECP and EES currently and that's an area that I think there's a lot of potential. And if we saw a shift from the more stringent mandatory requirements to a broader mandate, I think you'd see a lot more initiative in that area than you have to date. So I think there are some new areas that haven't been touched and it would help if legislation allowed that sort of activity to be pursued.

DR. RIEGEL: Okay. Thank you. David Moulton and Lewis Perelman are next up.

These will be the final two morning witnesses. The agenda calls for us to recess at noon for lunch and we will reconvene again at 1:00 o'clock.

David Moulton is from the Energy Conservation Coalition. Lewis Perelman from the Jet Propulsion Laboratory and we will begin with Mr. Moulton.

MR. MOULTON: Thank you. I am a Policy Director of the Energy Conservation Coalition which is an umbrella nonpartisan, nonprofit alliance of public interest organizations, formed to publicize and promote energy conservation. The organizations serving on its Board represent over six million members, making the coalition the nation's largest organization dedicated solely to increasing energy efficiency.

The members include the Federation of American Scientists, the Environmental Policy Institute, the National Consumers League, the National Wildlife Federation, the Union of Concerned Scientists, the Environmental Defense Fund and National Consumer Law Center and Natural Resources Defense Council, National Audubon Society, Friends of the Earth, Solar Lobby, Conservation Foundation, League of Women Voters, Conservation Foundation of New England and the Sierra Club.

The Energy Conservation Coalition (ECC) appreciates this opportunity to address this nation's "adequacy of attention to energy conservation methods" in accordance with Section 11 of the Federal Nonnuclear Energy Research and Development Act of 1974. The Coalition believes that this subject is critical not only to our energy future, but also to the economic well-being and national security of our country. Few issues rival energy in its fundamental relevance to the success or failure of both domestic and foreign policy. And few solutions to our current energy problem are as promising as energy conservation.

Since the Arab oil embargo of 1973, great strides have been made toward recognizing the special role that efficient energy use can play in our society. A series of comprehensive analyses of national energy demand has been made, which almost uniformly emphasize that reducing energy waste offers the best near-term option for achieving a reduction in oil imports at a reasonable cost, a reasonable speed, and with reasonable certainty in this decade.1/ Moreover, energy conservation will remain a critical energy "source for the foreseeable future.

For purposes of this hearing, we have assumed that the value of energy conservation is undisputed. We are asking whether we as a nation are taking adequate steps to achieve energy conservation.

The Energy Conservation Coalition believes that current attention to energy conservation methods is woefully inadequate.

The Administration has severely reduced federal energy conservation programs on the premise that rising energy costs will encourage all the conservation we need. This reflects a dangerous and unjustified complacency with the status quo.

Our foreign oil imports averaged around six million barrels per day for the first five months of 1981. It is true that this is the lowest level of imports since 1975, and represents a considerable achievement relative to the most recent past. But more importantly, it is the same level that we were importing in 1973 when the Arab oil embargo hit our economy like a shock-wave, causing double-digit inflation and the worst recession since World War II. A recent report of the Senate Energy Committee on world oil politics concluded that "(a) major oil supply interruption appears to be inevitable within the next decade."[2]

This fact alone dictates a strong federal interest in the pace of energy conservation in this country.

Instead, the Administration rejects any responsibility for the level of oil imports or the pace of energy conservation. It appears to be sleeping on the so-called "glut" -- the temporary condition of oversupply that has prevented rapid energy inflation during the Iran-Iraq war. This "glut" is due in part to the strong national commitment to energy conservation that previous administrations have espoused. But it can be wiped out in a matter of weeks by a single member of OPEC -- Saudi Arabia.

The Energy Conservation Coalition believes that at least three steps must be taken before the federal energy conservation program can be considered "adequate".

RECOMMENDATION #1: SET MEANINGFUL GOALS AND PRIORITIES

First, the Administration must develop meaningful goals and priorities for energy conservation before decisions can be made on a rational and consistent basis.

Even the previous Administration failed to take that step. Last year, for example, the Office of Technology Assessment harshly criticized the conservation program for lacking any meaningful goals or priorities.[3] Similar criticisms have been voiced repeatedly by the General Accounting Office. Most recently, in a June 17 letter to the energy committees of Congress, GAO wrote that "major decisions on the Federal Government's role in fostering energy conservation continue to be made without a clear understanding of energy conservation's contribution in resolving national energy problems in a timely manner."[4]

The basis of these criticisms is fundamental: unless the government sets meaningful goals and priorities, it has no means for determining the relative value of alternative energy conservation methods. Programs will be stopped, started and stymied haphazardly, without regard to need. Tax dollars will be misallocated and wasted for lack of focus and direction.

To its credit, the previous Administration responded to the past criticism by initiating a broad analysis of the potential for energy conservation by the year 2000. Begun in July 1979, under the direction of DOE and the Solar Energy Research Institute (SERI), this 18-month study reviewed each sector of energy end use and attempted to quantify the amount of energy that could be saved by the year 2000 using strict economic principles and assuming a strong growth-oriented full-employment economy.

The SERI report concluded that we could actually reduce current energy consumption by over 20 percent by the year 2000 without sacrificing other national goals. End use demand in that year would be 33 percent less than under current policy. The potential for each sector is shown on the Table 1 on the following page.

As the report indicates, these are goals, not forecasts. But as indicators of the potential for energy conservation that is realistically achievable, these goals can serve as a benchmark against which to measure progress in energy conservation. When one considers that renewable energy sources, according to the report, could contribute another 12 to 22 quads by the year 2000, it is clear that an enormous opportunity exists to gain control over our energy future.

The Reagan Administration took office as this study was completed. Unfortunately, the new Administration has failed to adopt meaningful goals and priorities. This is true not only of its energy conservation program, but of its entire energy program. Officially, its policy is to shun setting any goals or targets, and to reject any federal involvement in leading the nation towards more efficient energy use.5/ Moreover, it suggests that decisions about energy conservation will be made outside a comprehensive framework and without serious analysis.

The goals laid out in the SERI report were not accepted, and no attempt has been made to replace them. This reaction to the most thorough review of energy conservation potential to date does not augur well for energy conservation.

RECOMMENDATION #2: ADDRESS MARKET BARRIERS

Second, the Administration must devote attention to identifying the limits of market forces to encourage energy conservation. Without a thorough understanding of the barriers to energy conservation, the Administration is not in a position to decide whether existing programs are properly focussed to address real problems.

END-USE ENERGY DEMAND POTENTIALS

	1977 (QUADS)	Year 2000: Baseline (QUADS)	Year 2000: Economic Potential (QUADS)	Year 2000: Potential v. Baseline (PERCENT)
Residential Buildings	16.2	21.95	11.06	-50
Commercial Buildings	10.4	13.30	7.26	-45
Industry	29.1	39.70	29.40	-26
Agriculture	1.6	2.18	1.7	-22
Personal Transportation	15.1	13.26	7.6 - 11.4[1/]	-14 - -42
Freight Transportation	4.3	7.2 - 8.7	5.7 - 6.0	-17 - -34
TOTAL	76.7	97.59-99.09	61.91 - 66.01	-32 - -38

[1/] Without 50¢ gas tax

Source: Report on Building A Sustainable Future, prepared by the Solar Energy Research Institute, reprinted by Committee on Energy and Commerce, U.S. House of Representatives, Committee Print 97-K, April, 1981, pp. xxvii, 3, 81, 124.

Table 1

Consumers and businesses require extremely high rates of return on energy efficiency investments — much higher than seems rational to an economist. In a recent review done by Robert Williams of Princeton[6] the evidence revealed:

--In an analysis done by the National Association of Homebuilders, homeowners applied discount rates from 20 percent to 150 percent on energy efficiency investments.

--In an analysis done by Oak Ridge National Laboratory, median households applied a 47 percent discount rate on energy efficiency investments.

--In an analysis done on room air conditioners, the discount rate averaged from 15 to 25 percent, and rose to 89 percent for poor households.

--Volkswagen will only make fuel efficiency investments for new cars that correspond to a 52 percent discount rate for the owner.

--Data from the SERI report indicates that commercial building owners apply a discount rate of 65 percent or more to energy efficiency investments.

--Industrial investment standards imply discount rates of 40-110 percent.

If the market were working "properly", these discount rates would be much lower and economic waste would be avoided. If we pursue policies that do not address this problem, we are missing enormous cost-effective opportunities to bring our energy future under control.

Other evidence of the degree to which the real world falls short of the perfect market can be gleaned from tax data on the residential energy credit. Despite sharply rising oil and gas prices from 1977-1979, the data shows a decline of 8 percent in investment in energy conservation per capita.[7]

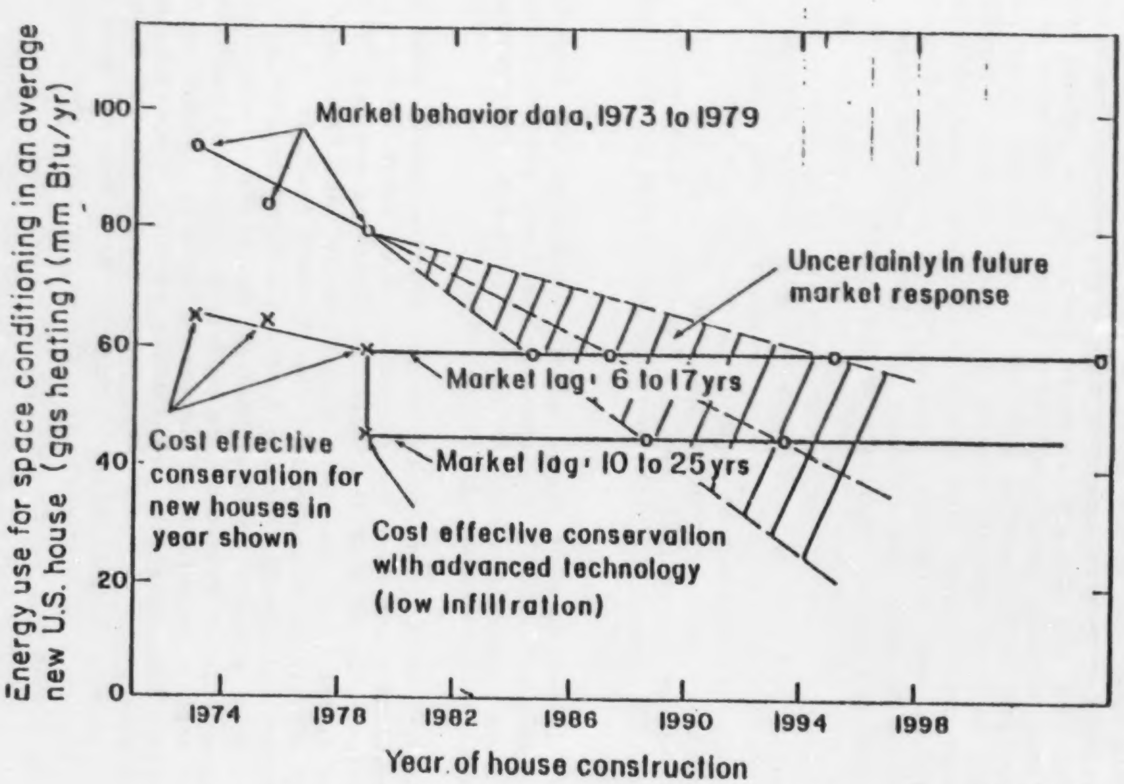
Similarly, recent data prepared by the Carrier Corporation indicates that from 1979-1980, despite rapidly rising electricity prices, the efficiency of central air-conditioners actually declined nationally after eliminating data on California sales (where mandatory state standards have been adopted). Central air-conditioners are purchased with little regard with little regard for the preference of individual consumers because they are usually "contractor-installed" before the consumer buys a house. The dominating factor is the contractor's desire to minimize first cost, not to minimize the life-cycle cost.

A useful summary of these imperfections with respect to appliances was given in 1977 by former Congressman David Stockman (now Director of the Office of Management and Budget) in his additional views to the House report on the National Energy Act:

> There is some reason to doubt that market forces alone will bring about the needed shift to more efficient appliances. Numerous witnesses appearing before the subcommittee testified that the average consumer looks for a payback from higher purchase prices within 3 years. In the case of an appliance with a useful life of 10 years, this short payback horizon severely limits the amount of higher purchase price the consumer will accept in choosing a more efficient product over a cheaper, less efficient product. A second reason to doubt the efficacy of higher electric prices in changing consumer appliance buying habits is the lack of information that would enable consumers to judge the relative efficiency of competing products, as well as a widespread lack of understanding of the little information that is available. A third reason that would support a regulatory approach is that the appliances in many new residential units are not purchased by the user, but are purchased by the builder, who will continue to seek appliances with the lowest initial cost without regard to increasing electric rates.
>
> In the face of these factors inhibiting the operation of market forces in the consumer appliance sector, a regulatory program designed to impose life-cycle cost purchasing on the consumer appears justified.[8]

Some of these imperfections are institutional, some are informational, and some are economic. The Energy Conservation Coalition believes that all these imperfections are part of the energy market, and result in significantly less investment in energy efficiency than economic theory would predict. A recent DOE report calculated that the American economy is $100 billion behind what economic models predict should have occurred in energy efficiency investment in buildings through 1979.[9] Professor Arthur Rosenfeld of Lawrence Berkeley Laboratory has translated this sluggish conservation of 6 to 17 years in gas-heated houses and 14 to 25 years in electrically heated houses. (See following pages, Tables 2 and 3) Paul MacAvoy made the same point on a broader scale in a recent New York Times article when he wrote:

> "The demand side of the world oil market is dominated by conditions that stubbornly refuse to surrender to the conservation ethic, or to the urgings for new energy-efficient technology. Increases in price reduce demand, but

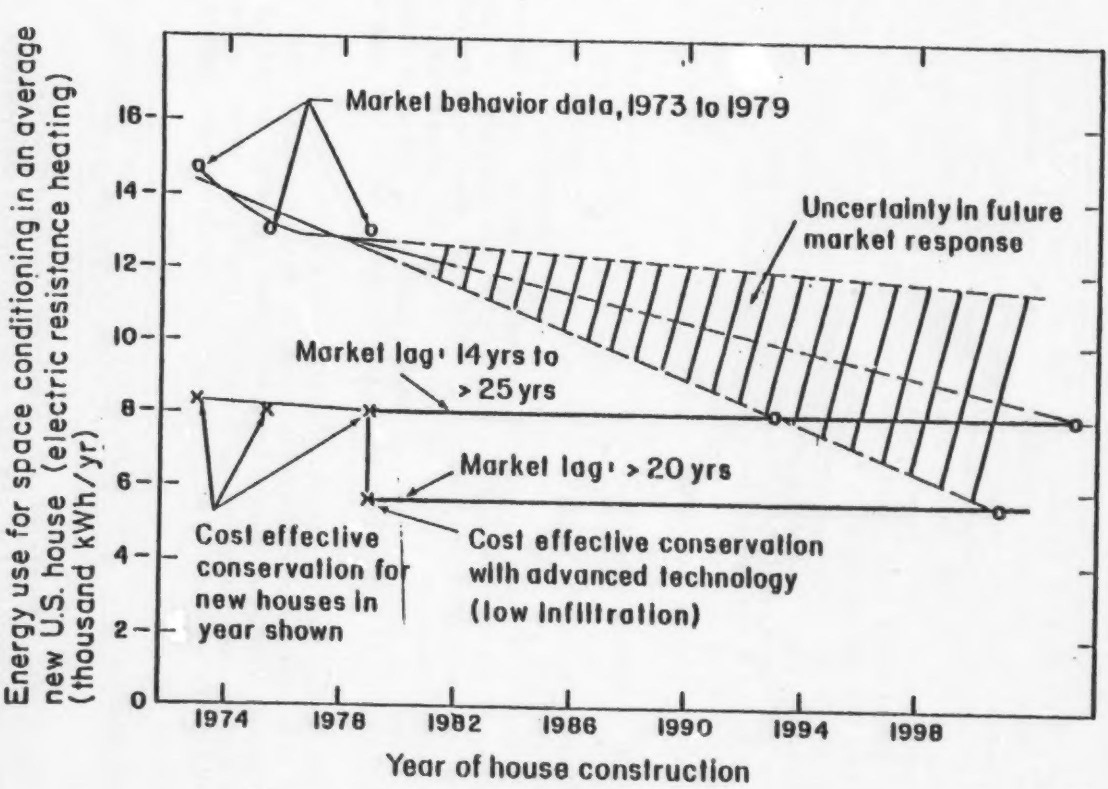


XBL 813-506

Figure 3. Market behavior and energy conservation in gas heated new houses in the U.S.*

* Based on LBL analysis of NAHB survey data on 300,000 houses constructed 1976-1979

Table 2



XBL 813-507

Figure 4. Market behavior and energy conservation in electric resistance heated new houses in the U.S.*

* Based on LBL analysis of NAHB data on 300,000 houses constructed 1976-1979

Table 3

only with a five-to-ten-year lag, and only by 30 percent as much as any percentage price increase.[10]

In addition to these market imperfections, an adequate energy conservation policy must explicitly address two other problems which bear on the ability of the market to realize our conservation potential -- social equity and basic research.

Equity: Energy is a necessity. Its use can be curtailed only so far before cutbacks threaten the health of consumers and businesses. Much of the potential for energy conservation will never be captured unless consumers possess the means and knowledge to invest in additional efficiency once outright waste has been curtailed. This requires capital and reliable information which individuals and small businesses often lack. Low-income families are particularly incapable of responding to higher prices by investing in energy efficiency. Their only choice is to reduce their standard of living unless programs are available to make energy efficiency investment financially practical. I think Marty Klepper very adequately addressed the issue of the kinds of barriers that prevent what appear to be very economic investments from actually occurring in the marketplace.

Research: Basic research in the field of energy conservation is a particularly peculiar problem, especially in buildings. The building industry is highly decentralized and fragmented and has little ability to support research and development. It is unlikely that Federally sponsored research aimed at understanding the flow of energy through a building or quantifying and mitigating problems of indoor air pollution will ever be undertaken by private companies when funds are cut by this Administration. Yet, unless we have a thorough understanding of those problems, much investment in energy conservation will be wasted.

The Energy Conservation Coalition believes that to be adequate, the energy conservation program must recognize that the free market contains these imperfections and that decisions to eliminate or expand existing programs should be made, in part, according to whether they increase or reduce these imperfections.

RECOMMENDATION #3: ACKNOWLEDGE NATIONAL INTEREST IN ACHIEVING CONSERVATION BEYOND MARKET LEVEL

Third, the Administration's energy conservation program inadequately accounts for the value to the nation of reducing oil imports.

The impact of embargos, or threats of embargos, on our national security justifies national energy conservation goals that exceed what is economically justifiable for the individual consumer. This issue was explored in last year's Section

11 hearings and report. The concept is as valid today as it was a year ago. Implicit in this recommendation is the premise that despite the oil import reductions we have experienced in 1980-81, 6.0 million barrels of oil per day (over a third of it from the Middle East) is a dangerous and undesirable level of imports and should not be tolerated.

The recommendations above are offered as the necessary prerequisites of rational decision-making in energy conservation. To summarize, they include:

1) setting meaningful goals and priorities;

2) identifying market imperfections and inequities;

3) recognizing the value of oil import reductions beyond what the market can accomplish alone.

Current energy conservation policy has been made without reference to this fundamental framework. The President's budget eliminates, almost without comment:

--Residential Conservation Service

--Commercial and Apartment Conservation Service

--Building Energy Performance Standards (both mandatory and voluntary)

--Residential Energy Efficiency Program (demonstration of innovative delivery systems)

--Appliance Efficiency Standards

--Small Business program

--Consumer Products program

--Analysis and Technical Transfer

--Emergency Building Temperature Restrictions

--Industrial Efficiency Program

--Transportation Systems Utilization

--Appropriate Technology

--State and Local Programs, including

*Schools and Hospitals (originally cut by 50 percent, later in Reconciliation, by 100 percent)

*State energy offices

*Weatherization

*Emergency planning

*Energy Extension Service

--The Solar and Energy Conservation Bank

The federal energy conservation budget would be cut by the Administration from $999 million to $199 million--80 percent.[11]

Other then to assert generally that tax credits and higher energy prices will pick up where these programs are eliminated, the Administration has not offered even the most rudimentary cost-benefit analysis of these radical cuts.

With regard to the residnetial tax credit, the Energy Conservation Coalition believes that this is an important but insufficient stimulus to increased energy conservation. It is insufficient because as a practical matter, the credit is useful to too narrow a segment of the American public. Recent tax data show that the wealthiest 25 percent of America's individual taxpayers claimed over 65 percent of the total claimed in both 1978 and 1979.[12] Eighty million owners and tenants are eligible and yet only 4.9 million taxpayers used the credit last year. It is not an attractive program unless the taxpayer 1) is a homeowner, not a renter; 2) can afford the entire up-front capital investment; 3) can afford to wait for a period of months to claim the benefit of the credit; 4) is in an income bracket high enough to create tax liability; and 5) has information on the availability of the credit.

An adequate energy conservation program must make energy efficiency investment a realistic opportunity for all Americans. Programs designed to supplement the tax credit include the low-income weatherization program at DOE and the Solar Energy and Energy Conservation Bank at HUD. These programs have been specifically designed to reach the majority of Americans who have not been able to take advantage of the tax credit. The weatherization program appears to be particularly cost-effective, saving an average of 26 percent of the energy in each weatherized house at a cost far below the cost of heating fuel.[13] I believe Mark Cooper earlier today addressed the findings of his study from which my data was taken. Yet, the Administration has proposed eliminating funding for both programs.

Internal DOE documents provide evidence that many other programs slated for elimination may be cost-effective. In a March 3, 1981 DOE memorandum assessing the cost-effectiveness of programs within the jurisdiction of Buildings and Community Systems at DOE, it was estimated that the cost per barrel of energy saved from 1980-2000 was as follows:

Voluntary BEPS	$ 5
Buildings Conservation (RCS)	$17
Appliance Standards	$ 3
Consumer Products	$ 4
Analysis & Tech Transfer	$ 3
Community Systems	$16
Small Business	$ 6

If these programs were maintained, cumulative energy savings would reach 53 quads by the year 2000, at an average cost of less than $10 per barrel. (See on the following page, the DOE memorandum dated March 3, 1981, "Effects of Rescission and Budget Cuts on the BCS Portfolio.")

Similarly, careful analysis of DOE's industrial conservation program shows that eliminating that program would eliminate an estimated annual savings of 9 quads. (See Tables 4, 5 and 6)

There is no evidence that decision-makers at DOE have made any attempt to refute these documents, or to incorporate them into their decisions.

These documents are exactly the kind of analysis that the Energy Conservation Coalition would expect to be undertaken in a rational decision process. But they apparently are not being used. Nowhere has this Administration explained why achieving these savings at such bargain prices is undesirable for the nation.

Finally, the Administration has made no attempt to target its energy budget cuts on those programs which the market could conceivably absorb. For example, one of the healthiest, most prosperous sectors of today's economy is the oil and gas sector. In an era of fiscal austerity, subsidies and incentives to that industry could be eliminated with the least adverse impact on national goals. Yet the Administration has left virtually untouched an estimated $5 billion in oil and gas tax subsidies which alone account for half the $10 billion in energy supply expenditures in the federal budget. (See Table 7). In contrast, the Administration is cutting energy conservation programs which were designed specifically to address the problems that the market does not adequately address.

UNITED STATES DEPARTMENT OF ENERGY

DATE: March 3, 1981

SUBJECT: Effects of Rescission and Budget Cuts on the BCS Portfolio

Energy savings estimates and the cost of saving one barrel of oil equivalent have been estimated for BCS program elements. These estimates have been made under the assumption of 100% funding, 50% reduction in funding, and 100% reduction of funding. These estimates were derived using the ORNL and Threshold Models and divisional inputs on project priorities under budget reduction scenarios.

Compared with the ORNL's models used last year, the models have been improved by 1) modifying the manner in which the efficiency of new buildings is calculated, 2) the appliances are retired, and 3) by updating most cost efficiency curves. The model still assumes, however, that if a level of efficient products/structures are demanded, industry will supply what is demanded. Last year, no models were used directly to estimate the energy demand reduction resulting from Community Systems activities. This year the potential for savings was identified through the BNL Reference Energy Systems model and the Systems Analysis Branch case analysis. BNL District Heating model inputs and Community Systems personnel inputs were also used this year to estimate energy savings for the division. Of course, a new and higher set of energy price projections were used in all model runs.

The results show significant differences between the 1980 and 1981 estimates of energy savings and associated costs per barrel of savings. Cumulative energy savings are lower for three programs, while they are augmented in the remaining four. In general, the cost per barrel of energy savings is substantially lower than indicated by last year's estimates.

The reduction in the dollars per barrel reflects the improvements in the models. These improvements, coupled with the higher energy price streams, have resulted in lower energy demand in the base case. This has made the change in energy demand smaller and at the same time has made the change in private investment proportionately smaller.

The table below shows last year's estimates in savings and $/BBL compared with the full funding case of this year.

	1980 ESTIMATES		1981 ESTIMATES	
PROGRAM ELEMENTS	Quads	$/BBL	Quads	$/BBL
Building Systems	41.6	7.40	14.8	3.75
Buildings Conservation Services	7.8	24.25	10.2	17.20
Appliance Standards	16.2	9.62	10.9	2.67
Technology and Consumer Products	7.4	1.88	4.3	3.78
Analysis and Technology Transfer	12.6	6.09	15.0	3.06
Community Systems	6.3	7.48	10.0	15.93
Small Business	1.4	10.38	5.5	5.50

Attached are Tables 4, 5 and 6 showing levels of funding and the energy saving estimates (based on normalized Threshold Runs) for the projects deleted for a 50% reduction. Note also that some energy savings will occur due to past and current BCS activities even if BCS is "zeroed" out.

SPECIFIC IMPACTS OF FY 1981 RESCISSION AND ZERO BUDGET IN FY 1982

Industrial Energy Conservation

The Reagan budget of $43 million in FY 1981 and $0 in FY 1982 prompted a recent detailed analysis and replanning of the Industrial Program in both years. The analysis was based strictly on the assumption that $43.0 million is the only future funding for the program with FY 1982 and subsequent years without additional authority.

As required by prudency, some efforts previously planned for FY 1981 were not begun in order to fund efforts through completion. Costs were estimated for close out of projects also. These costs would be within the $43.0 million of FY 1981 funding.

The specific project impacts have been listed in two categories: those which will be closed out after significant investment but prior to completion of all objectives, and those identified opportunities which will not be started. The following tables summarize the projects in these two categories.

03/02/81

ENERGY SAVINGS PROJECTIONS FOR BUILDINGS AND COMMUNITY SYSTEMS
BY PROGRAM ELEMENT; BASIC BUDGET

	COST (Billions of 1980 $)			1985			1990			1995			2000			CUMULATIVE TOTAL 1980 - 2000			
	FED	PRIV	TOT EXPEN	Q	MMB	MMBOE	Q	MMB	MMBOE	Q	MMB	MMBOE	Q	MMB	MMBOE	TOT QUADS	ACTUAL OIL	OIL EQUIV	B/B
Building Systems (BBEPS)	0.233	9.33	9.56	0.15	4.12	25.8	0.37	7.92	63.6	0.45	10.44	77.4	0.57	11.84	98.04	14.8	180.6	2545.6	3.75
Building Systems (Voluntary BEPS)	.233	7.5	7.7	.09	2.57	15.5	0.23	2.57	39.6	0.27	3.84	46.4	0.35	4.07	60.2	9.0	87.0	1548.0	5.00
Building Conservation Services	0.326	29.8	30.13	0.35	9.54	60.2	0.5	14.5	86.0	0.5	14.5	86.0	0.5	14.5	86.0	10.2	364.3	1754.4	17.2
Appliance Standards	0.050	4.96	5.01	0.03	1.0	5.2	0.3	6.3	51.6	0.43	8.42	74.0	0.47	8.94	80.8	10.9	141.9	1874.8	2.67
Technology and Consumer Products	0.200	2.60	2.80	0.12	5.85	20.6	0.12	5.85	20.6	0.1	5.81	17.2	0.1	5.81	17.2	4.3	173.7	739.6	3.78
Analysis and Technology Transfer	0.049	7.85	7.9	0.12	4.6	20.6	0.3	10.2	51.6	0.44	14.6	75.7	0.56	19.1	96.3	15.0	421.4	2580.0	3.06
Community Systems	.093	27.2	27.4	0.0	0.0	0.0	.33	11.35	56.76	.33	11.35	56.7	.33	11.35	56.7	10.00	255.0	1720.0	15.93
Small Business	.009	5.18	5.19	0.28	2.6	48.2	0.28	2.6	48.2	0.28	2.6	48.2	0.28	2.6	48.2	5.5	104.4	946.0	5.5
TOTAL BCS	0.96	86.92	87.88	0.87	20.16	149.7	1.84	45.59	316.46	2.04	50.21	350.96	2.20	52.14	378.34	53.5	1133.0	9210.6	9.54

Table 4

PROJECTS CLOSED OUT PRIOR TO COMPLETION
($000)

WASTE ENERGY REDUCTION	INVESTMENT TO DATE	COST TO COMPLETE	ESTIMATED ANNUAL SAVINGS (QUADS)
Reradiant Recuperator	$ 2,322	$ 700	.15
Air Fuel Ratio Controller	766	300	.12
Oxygen Enrichment	845	100	.20
Large Passage Ceramic Recuperator	835	1,400	.12
Water-To-Water Heat Pump	400	3,000	.10
HiCOP Heat Pump	3,325	340	.30
Waste Oil Utilization	3,500	1,000	.16
Waste Fired Brick Kiln	797	1,000	.50
Liquid Fuel From Waste Research	671	500	.50
Energy From Waste Water	461	1,500	.07
SUBTOTAL - WASTE ENERGY REDUCTION	$13,932	$ 9,840	2.22
INDUSTRIAL PROCESS EFFICIENCY			
Coal In Aluminum Remelt	$ 3,740	$ 3,000	.03
Glass Pellet Preheat	600	2,750	.06
Direct Reduction Of Aluminum	4,155	7,500	.70
Inert Anode	820	4,000	.20
Aluminum Cathode	2,400	1,500	.20
Hot Inspection/Steel	2,568	1,072	.30
Freeze Concentration	876	5,000	.05
Foam Processing	658	860	.05
Chemical Separation - Critical Fluid	981	3,000	.40
Sensor Development	675	1,025	.15
Energy Recovery - Dryers	270	736	.06
Cutting Tool Coatings	31	83	.01
SUBTOTAL - INDUSTRIAL PROCESS EFFICIENCY	$17,574	$30,526	2.21
COGENERATION			
Single Stage ORC	$ 2,035	$ 300	—
Coal Fired Brayton Cycle	1,775	8,000	.25
Steam Diesel	595	30,000	.60
Subatmospheric Brayton	3,117	2,000	—
SUBTOTAL - COGENERATION	$ 7,522	$40,300	.85
TOTAL - PROJECTS STOPPED BEFORE COMPLETION	$39,028	$80,666	5.28

Table 5

PROJECTS WHICH WILL NOT BE STARTED

WASTE ENERGY REDUCTION	ESTIMATED POTENTIAL ANNUAL SAVINGS (QUADS)
Fluidic Temperature Sensor	.03
District Heating Recuperator	.20
BiPhase Concentrator	.06
Slagging Burner	.20
Chemical Heat Pump	.10
Wood Fired Lumber Dryer	.03
Mobile Tire Pyrolysis	.04
Comminution And Blasting	.02
Liquid Fuel From Waste Pilot	.07
Fluidized Bed Waste Heat Boiler (1 Project)	.20
High Temperature Burner Duct Recuperator (1 Project)	.30
SUBTOTAL - WASTE ENERGY REDUCTION	1.25
INDUSTRIAL PROCESS EFFICIENCY	
Cement Particle Size Control	.10
Coke Pellet Process	—
Formcoke Process	—
Advanced Copper Smelting	.01
Hydropyrolysis - Chemical Burning	.20
Efficient Motor Development	.20
Computer Controls - Manufacturing	.15
Advanced Catalytic Reactor	.50
Methane Transport	.50
Dessicant Lumber Drying	.01
New Pulp Process	.08
Energy Integrated Farms (3 Projects)	.01
Citrus Process Development	.04
Mechanical Vapor Recompression	.06
Energy Conservation Meat And Dairy	.03
Crop Drying System Demonstration	.03
Vegetable Oil Continuous Process	.03
SUBTOTAL - INDUSTRIAL PROCESS EFFICIENCY	1.95
COGENERATION	
Brayton Topping System (2 Projects)	.25
Large Bottoming Cycle	.01
Thermionic Topping	.09
SUBTOTAL - COGENERATION	.35
IMPLEMENTATION AND DEPLOYMENT	
EADC (10 Universities)	.01
Industrial Workshops	.01
Technology Implementation Programs	—
SUBTOTAL - IMPLEMENTATION AND DEPLOYMENT	.02
TOTAL - PROJECTS WHICH WILL NOT BE STARTED	3.57

Table 6

TABLE 1

EXISTING ENERGY-RELATED CHARACTERISTICS BY 1977 FAMILY INCOME 1/ (Winter 1978-79)

	1977 FAMILY INCOME					
	Less than $5,000	$5,000 to $9,999	$10,000 to $14,999	$15,000 to $19,999	$20,000 to $24,999	$25,000 or More
TOTAL	100%	100%	100%	100%	100%	100%
STORM WINDOWS						
All windows covered	30	34	39	48	43	48
Some windows covered	19	20	19	18	25	22
No windows covered	52	46	43	34	32	30
STORM DOORS						
All doors covered	30	38	36	41	39	37
Some doors covered	18	22	21	25	25	31
No doors covered	52	41	42	34	34	31
ATTIC INSULATION						
Have insulation	41	57	68	74	80	86
No insulation	37	29	19	15	9	9
Don't know	22	13	14	11	11	5
HAVE WALL INSULATION						
Yes	28	41	51	56	57	63
No	44	34	25	25	23	18
Don't know	27	24	24	19	20	19

1/ Source: U.S. Department of Energy, Residential Energy Consumption Survey: Conservation, Washington, D.C., February, 1980, p. 31.

survey of conservation behavior shows that the poor are just as likely as the average income households to take cost-free conservation measures (such as shutting off rooms; see Table 2). However, as the cost of conservation measures increase (such as adding insulation) the poor are less likely than average income households to implement such measures.

The Federal weatherization program has been in existence since 1973. The program was developed and administered by the Community Services Administration in response to the impact of OPEC price increases on low-income households. Through congressional action, the program was transferred to the U.S. Department of Energy (DOE) in 1977. Under the DOE program, grants are made to states, which generally subcontract to community action agencies to serve as local delivery mechanisms. Most geographic areas of the county are presently being served by the program.

Though the DOE weatherization program initially had serious management and coordination problems, during the past year, the program has improved significantly. For example, during the calendar year 1979 the DOE program weatherized 144,000 housing units throughout the country. During calendar year 1980, the DOE program has weatherized over 311,000 housing units - an increase of over 100%.

Recent studies of the DOE weatherization programs in Indiana, Michigan, Minnesota, Pennsylvania, Utah, Washington and Wisconsin indicated an annual household energy saving of 20-25%. Since current data indicates that low income households on the average, spend at least 21% of their income on household energy (in the Midwest and Northeast region of the U.S. it is over 30%), the 20-25% energy conservation saving is necessary for the household to have sufficient finances to purchase food, shelter, clothing, etc.

The national weatherization program serves eligible low-income households with a priority placed on the elderly and handicapped. The recent success of the program has documented clearly the effectiveness of the program and the financial relief provided to the household's receiving services.

III. THE ADMINISTRATION'S PROPOSAL

The Administration has proposed that the existing Department of Energy (DOE) low-income weatherization program be phased out during FY 81. The legislative authority for the program would be transferred to the Department of Housing and Urban Development (HUD) without explicit line item funding.

TABLE 2

CONSERVATION EFFORTS UNDERTAKEN IN 1978 BY 1977 FAMILY INCOME [1/]

(Percentage of Households)

	1977 FAMILY INCOME					
	Less than $5,000	$5,000 to $9,999	$10,000 to $14,999	$15,000 to $19,999	$20,000 to $24,999	$25,000 or More
Type of Conservation Measure:						
ROOMS CLOSED OFF						
Yes	28	33	31	31	32	30
No	59	55	56	61	57	60
No answer	13	12	13	8	11	10
ADDED INEXPENSIVE INSULATION						
Yes	18	23	26	32	31	27
No	82	77	74	68	69	73
ADDED INEXPENSIVE EQUIPMENT						
Yes	4	4	7	8	11	12
No	96	96	93	92	89	88
ADDED EXPENSIVE INSULATION						
Yes	3	3	6	6	8	9
No	97	97	94	94	92	91
ADDED EXPENSIVE EQUIPMENT						
Yes	3	3	5	5	7	8
No	97	97	95	95	93	92

[1/] Source: U.S. Department of Energy, Residential Energy Consumption Survey: Conservation, Washington, D.C., February, 1980, pp. 31, 115.

The program would be one of several activities eligible for funding from HUD's Community Development Block Grant (CDBG) program.

The impact of the Administration's proposal would assure the demise of the low-income weatherization program. The program would be competing for funds with CDBG and Urban Development Action Grant (UDAG) programs. As always, the poor would lose in such competition.

The Administration's proposal would yield the following problem:

1. The CDBG program is, by itself, a $4 billion program with strong competing interests for its funds at the local level. The considerably smaller weatherization program (FY 81 appropriation - $182 million) would be lost in the midst of such a wide ranging program. There would not necessarily be any targeting to weatherization since competing interests include streets and sewer projects, housing authorities, water projects, downtown development projects, neighborhood parks, etc.

   Since the other competing interests have considerably more political power than low income people, the poor would lose in such competition. In addition, if CDBG is restructure to allow more flexibility to local government, it is highly probable that such block grant monies will be utilized to offset fiscal pressures on the local tax dollar-further jeopardizing the continuation of the low income weatherization program at the low income weatherization program at the local level.

2. CDBG is primarily an urban program whereas the DOE weatherization program is a rural and urban program. For example, almost 75% of the FY 80 CDBG funding was allocated to large cities and urban counties, while the remaining 25% was allocated to less populated areas.

3. The household income eligibility guidelines between the two programs are significantly different. The CDBG eligibility guidelines are more lenient than current DOE-OMB eligibility guidelines. CDBG currently serves low and moderate income households and the DOE weatherization program serves poverty households as defined by OMB. Thus, the program would not be targeted to the most needy households.

4. Linkages between the weatherization programs and the fuel assistance program would be difficult to achieve since they would have differing income eligibility guidelines and would operate under two different block grant programs (weatherization-local block grant, fuel

assistance - state block grant). Such linkages are important if a national goal is to reduce the need for fuel assistance through weatherization of low-income dwellings.

5. There would be no national standards of services or requirements as well as no national policy regarding weatherization of low-income dwellings. National weatherization standards developed over the past 7 years by the Department of Energy, Community Services Administration, National Bureau of Standards, and other Federal agencies may not be utilized by local governments under the Administration's proposal. Thus, if the program continues on a local level, "the wheel may be reinvented" at substantial administrative cost and hardship to low-income households.

6. The currently effectively operating weatherization program with trained personnel, management systems in place with existing space, vehicles, tools, and equipment would be dismantled. It would be cost inefficient to dismantle the current program and at a later date, when consumer conservation becomes popular again, establish a new program.

Finally, the poor cannot afford "conservation through price increases", as they simply do not have the resources to make conservation improvements and at the same time, cannot afford to pay their fuel utility bills. The energy problems of the poor will only worsen if a national, targeted weatherization/ conservation effort for low-income households does not exist.

IV. RESPONSE TO THE SECTION 11 1981 ISSUES FUNDING MECHANISM AND STRUCTURAL ISSUES

A. In light of the proposed changes, how can the nation maintain an effective low-income weatherization program?

As indicated previously,, the Administration's proposals do not assure the maintenance or even the continuance of an effective low-income weatherization program.

The continuation of the program can only be assured through categorical funding or modifications of current block grant proposals whereby the continuance of the program is mandated.

B. If weatherization is tansferred into the HUD Community Development Block Grant, what agencies would be effective sponsors at the community level?

The current agencies operating the program - community action agencies, non-profit organizations, and in some localities, local units of government.

Such agencies have dramatically improved the program from a management disaster (due largely to lack of staff from the Department of Labor CETA Program) to an effective and successful activity.

The President's proposal regarding the Community Services Administration does not, generally, jeopardize the existence and continuation of community action agencies, the major local sponsor of the low-income weatherization program. The majority of community action agencies are non-profit organizations that receive most of their funds from sources other than the Community Services Administration released a report on April 30, 1981 that stated "of nearly 900 CAA's (Community Action Agencies) reporting in FY 1980 only $288 Million was provided to CAA's from the Community Services Administration and over $1.7 Billion was received from other Federal, state, and private sources."

The report also indicated that such agencies served over 25 million poor and near-poor during the period covered by the report.

C. How can problems involved in transferring the program from one agency to another be minimized?

Such problems can be greatly reduced by retaining and continuing existing local sponsors of the program. As indicated previously, current local sponsors of the program have trained personnel, management systems in place, vehicles, tools, equipment, and such supplies and arrangements that are necessary for program continuation.

Nationally, such problems can be minimized by transferring existing national staff to the new agency. Since the low-income weatherization program has already experienced one transfer to a new agency (CSA to DOE), it would be inadvisable, from a programmatic and productivity perspective, to promote or initiate actions regarding national staff that would interrupt the continuity and performance of a successful program.

In addition, continuation of current national performance, and service standards and income eligibility guidelines, would minimize the negative impact of national organizational changes on low-income households receiving services.

IMPLEMENTATION ISSUES

A. If a state decides to phase out community action agencies, how can their resources and expenses be transferred to the new weatherization sponsor?

As indicated previously, community action agencies are not dependent on the Community Services Administration and states' sources of funds for their continued existence. Such agencies are, generally non-profit organizations that recieve a variety of Federal, state, local, and private funds.

If some community action agencies were phased out, their resources and experience can be transferred to new weatherization sponsors by the following:

1. Transfer to the new sponsor ownership of vehicles, equipment, supplies, etc.,
2. Employment of existing staff by the new sponsor,
3. Local training programs.

It should be understood that if the above was necessary, the interruption of the existing program through local organizational changes would disrupt program operations and services for a period of time and performance standards would be compromised.

B. Should LIEAP funds be utilized for weatherization? How can the LIEAP program coordinate its activities with the weatherization program at the state and/or local level?

The option to utilize LIEAP funds for weatherization should be available to the states. A percentage limitation should be placed on transferring energy assistance benefits to weatherization. It should be noted that in northern and eastern states a low-income household's health and safety can be jeopardized in a weatherized house if there is insufficient fuel to heat the house. Weatherization does not remove the need for fuel assistance. Therefore, such options should be utilized only when it does not jeopardize the health and safety of low-income families and the elderly. Coordination of the activities of the LIEAP and weatherization programs can best be designed when Congress determines whether or not both programs are categorical in nature or block grants. Coordination between the two programs would be difficult to achieve if the Administration's proposals were enacted by Congress. The Administration has proposed that the LIEAP program be funded through state block grants and as mentioned earlier, the low-income weatherization programs be funded, at the discretion of local government, as one of several activities of CDBG local block grant programs. The Administration's proposal does not include any requirements or even suggestions regarding coordination activities of both programs. Thus, if the Administration's proposal were enacted, coordination would depend upon the state design of the LIEAP program and local governments' decision as to whether or not it will fund the low-income weatherization program and if so, the design of such a program.

C. What is the most equitable and cost-effective weatherization program? Should the Federal government continue to provide substantial assistance ($1000-$2000/Unit) to a relatively smaller number of houses? Or, should the program be restructured to provide minimal weatherization ($200-$300) to a large number of units?

The most equitable and cost-effective weatherization program would be for the Federal government to provide assistance in the unit cost range of $1000-$2000 per unit.

The Federal fiscal appropriations for the program has limited, severely, the number of households that can be served. Such appropriations need to be increased dramatically.

It appears that we have two options:

1. Fund the low income weatherization program at a realistic, level, in order to conserve energy, relieve the energy fiscal burden on low income households, and reduce future costs of the LIEAP program

   OR

2. Continue, out of political and practical necessity, to annually increase LIEAP funding to protect the health and safety of low income households and the elderly.

Our national priorities appear to be confused. We plan to allocate $1.875 Billion for LIEAP during the next fiscal year, and maybe $150 Million for weatherization, or none at all. Yet, the weatherization program will save energy, reduce the energy cost burden of low-income households, and reduce the need for yearly increases in the LIEAP program. Common sense would dictate that a significantly increased weatherization program resulting in long-term housing benefits would be more preferable to increasing the cost of the

LIEAP program that does not yield such benefits and does not save energy.

Until we, as a nation, plan and act logically regarding the energy problems confronting poor people, we will continue to spend money foolishly and at the same time not achieve our intended objective.

D. How can CETA workers be retained in the weatherization industry?

Many CETA workers who were previously employed in the weatherization program have been retained in the weatherization industry. Since the CETA program, for all practical purposes, has been phased out over the past year, the question today is not completely relevant. It appears that many CETA workers have been absorbed into the weatherization program subsidized by DOE funds.

Additionally, large numbers of CETA workers have been laid off and are, currently, unemployed receiving unemployment compensation or welfare.

Finally, the following recommendations are proposed to EPA:

1. Section 11 should adequately address the impact of rising energy prices on the 14 million low-income households in the United States;

2. Section 11 should recommend legislative, budgetary, regulatory, and administrative solutions to the energy problems confronting low-income households.

3. Such recommendations should include continuation of the current national weatherization, energy fuel assistance, state and local conservation programs at, minimally, last year's funding levels;

4. Such recommendations should also include continuation of the existing solar and alternative energy programs, especially where such programs utilize technologies that are renewable, low cost, and labor intensive. An example of a successful program in this area is the National Center for Appropriate Technology.

An increased versus decreased government role is needed in the implementation of energy policy, especially as such policies impact on consumers. The average citizen, especially low-income people, cannot possibly compete with the power and influence of the business community in Washington, D.C., state capitals, or local municipalities. Low-income people and the average middle class citizen need the strong role of government to protect their interests.

As stated earlier, "conservation through price" is not possible for low-income people since their incomes cannot tolerate the burden of rising energy costs.

Thank you.

DR. RIEGEL: Thank you. Peter Robinson is the Executive Director of the Maynard Community Development Office.

MR. ROBINSON: Good afternoon. It's a pleasure to have this opportunity to talk to you. A little on my own background. I've been in the energy consulting business for a few years, and I am currently the Director for Public Affairs for the Association of Energy Engineers in New England.

My main reason for being in community development is latitude. It gives me an opportunity to put a lot of different fields together. The purpose of these hearings is to determine how to maintain an adequate level of attention towards the existing energy program imperatives.

You'll probably hear some accusations that the Federal government is abandoning underprivileged and-low income citizens, but I happen to be encouraged by the new directions of the Federal energy policy.

Decentralization itself is highly desirable since it allows programmatic adaptation to the needs of the different regions.

As for funding cutbacks, these will affect programs in direct proportion to the cuts effectuated in the new budget. Market projections indicate rising prices of energy commodities, and they should be considered accurate in spite of a temporary hiatus.

The current glut of oil can be relied on only so long as it is politically expedient to the needs of the area. The political history of the Middle East is consistent only in its inconsistency. When projecting a continued rise in the price of energy, market forces will be created to enforce ongoing conservation efforts.

It's natural to look to state and local units of government to take over many of the activities that were previously funded by the Federal government; however, these units of government are faced with the same trend toward less government, less regulation and less taxation. This seems to contraindicate any involvement of these units of government with actual implementation of conservation retrofits. In Massachusetts, proposition 2 1/2 is tearing away and many say, gutting the effectiveness of state and local governments. This indicates that state and local governments will not be able to maintain present levels of services let alone extend themselves to additional expenditures in the name of conservation.

Major cities are not the only areas that are on the brink of bankruptcy. Many of our smaller towns at the heart of America are for the first time experiencing financial difficulties.

Government efforts to date have been needlessly complicated and expensive due to the multiple levels of administration which have been needed to insure regulatory compliance. This mountain of regulations is the root and cause of the trend away from big government and its attendant evils.

In the course of aligning itself with consumer oriented groups, the government has unwittingly adopted an adversarial position in relationship to business.

This position is simultaneously a foundation block and a stumbling block for all resulting legislation. The purpose of business has never been, nor will it ever be, fleecing the public. Business has always endeavored to supply goods and services to the public at an affordable price; albeit, with an acceptable profit margin. This means that business is doubly accountable to the public since they must be responsive to consumers as well as to their stockholders or investors.

Federal government has a mandate to rationalize and reduce needless expenditure. This means that very possibly a great many programs will have to be dropped. It is, therefore, reasonable to assume that the private sector will take the lead in offering the consumers reasonable alternatives to those activities which were previously subsidized. Adequate attention to conservation can be assured by encouraging business to take over many, if not all of the activities previously subsidized.

Program cutbacks will inevitably reflect the amount of the cuts. Zero funding will, in many cases, result in total cessation of activity in the affected areas. Hopefully some of these projects will be resurrected by business when market economics indicate potential for a profit.

It behooves the Federal government to assist and encourage the assumption of these activities by the private sector. Government regulatory involvement has done nothing to date to discourage their efforts.

In order to entice business to prioritize conservation efforts, it is necessary to allow it to continue to exist. For business, existence is predicated on a reasonable profit, which is necessary to remain in and do more business, stimulating the economy.

Examples of efforts in innovative financing at the state level. One innovation involved is having a utility company issue grant subsidies to consumers for weatherization retrofits. Needless to say, the utility was not particularly enthused.

NECPA mandates that the utilities supply consumers with energy audits, and otherwise refrain from entering allied weatherization or financial fields. Since the passage of NECPA, it's become apparent that under the restrictions of NECPA, no one else cares to become involved in these fields. There has been a great deal of negative public commentary on the hidden costs of legislative energy audits. In Massachusetts, the are "hidden" on all gas and electric utility bills as "RCS charges, 30¢." 30¢ times 2.6 million utility bills translates to a cost of over $100 per audit, even if they achieve their target figures.

Virtually no one has seen fit to comment on the fact that free audits have always been available from the insulation industry. The most noteworthy of these provides a free "thermal analysis", so as not to compare with their legislated energy audit. The audit includes a cost estimate with simple payback calculations, a full three-year warranty on work performed, and also includes a free thermographic inspection to test for and correct voids. Strangely enough, this program is offered by a utility company which was grandfathered into the insulation business under NECPA.

The banking and investment industries are beginning to enter the industrial retrofit business with the concept of avoided cost financing. This concept uses the savings generated by the retrofit to make the payments on the equipment. Although final costs are frequently higher than if the measures had been fully capitalized, this means of financing is highly attractive to a large number of institutions, including municipalities confronted with tax cuts at the state level. Avoided cost financing turns out to be more interesting to them than the schools and hospitals program, since that program requires that they front 100 percent of the cost against the possibility of the 50 percent fund match. Several banks are currently investigating the feasibility of an energy management and financial planning package which works in conjunction with avoided cost financing. In this way, a consumer may realize a return on investment while simultaneously lowering fuel bills.

Federal government must make every effort to assist business and industry in their forthcoming ventures into the field of energy conservation. Some means of assistance are: one, information and market analysis; two, program development and synthesis; three, removal of inhibitory legislation; four, promotion of enabling legislation; five, formation of a loan guarantee pool to allow low income participation in the new financing packages; and six, formation of a subscriber paid interactive energy information network which would utilize existing data communication technology. The interactive mode should greatly facilitate monitoring and evaluation of the new programs as well as suggesting new directions for further business participation. In summary, the Federal government in general, and the Department of Energy in particular, are invaluable sources of information which can be utilized to stimulate economic recovery and revitalization of various industry sectors.

Promotion of enabling legislation will allow a synthesis or combination of business, industry and banking interests for the welfare of the nation.

DR. RIEGEL: Thank you very much. Next on the agenda is Mr. Keith Dorsey, representing the National Black Caucus of State Legislators.

MR. DORSEY: Good afternoon. I'm the special assistant to the National Black Caucus of State Legislators, and I'm here actually to present testimony of the Honorable Larry Young who is a member of the Maryland House of Delegates and the Executive Director of the National Black Caucus of State Legislators as well as the Chairman of its Energy Committee.

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STATEMENT OF MR. LARRY YOUNG

It is a pleasure for me to be here today to address the topic of Federal energy conservation programs and their adequacy or inadequacy. This is a most important process because energy conservation is one of the most significant tools we have as a nation to become energy secure. While I will not dispute that energy production must take an important role - it has to - nevertheless, conservation still remains the cheapest and most cost-efficient source of energy we have.

According to one source, energy conservation programs have helped over the last two years to reduce U.S. oil imports from a peak of 8.8 million barrels per day to about 5.6 million barrels per day. In 1980 alone, this amounted to savings in the amount of $25 billion in the cost of U.S. oil imports.

So I come to this hearing today with mixed emotions on the Administration program to cut 70-80% of the funding for DOE conservation programs. The budget cuts, while looking nice in budget columns, in fact will not only destroy valuable ongoing, effective programs but will also foreclose valuable payoffs in the future. I believe the long-term impacts will be substantial and that the budget cuts are at best a gimmick to reduce Federal outlays without considering the impact of the cuts.

Not only are Federal conservation programs effective for our nation as a whole, but they are especially effective for minority and low-income constituencies - represented by me and other members of the National Black Caucus of State Legislators - as energy prices continue to rise.

In this regard, I believe the Administration has violated one of its own principles as presented in the National Energy Plan III Discussion Paper that stated:

> "Formulation of energy policy must be sensitive to the needs of the poor. But energy policy should not be used as an income transfer program. For example, holding energy prices down for rich and poor alike is an ineffective way to help the poor."

Energy conservation programs do not hold down energy prices - they offset the impact of rising prices. Oil decontrol has occurred and natural gas decontrol is next. Decontrolling pricing may encourage production of more oil and gas, but producing more energy will not help minorities and the low-income to pay their fuel bills. Therefore, the only long-term solution available is a vigorous conservation effort aimed at reducing fuel consumption by the low income, with a reseulting reduction in their energy costs.

The items outlined in the EPA Public Hearing Issue Paper are interesting points that I will try to answer in a general fashion from the perspective of a state legislator.

I think that most state and local energy agencies are currently wondering about their mere existence. The state and local responsibilities in the area of energy conservation were primarily responsibilities vested by the Federal government and funded with Federal dollars. With the budget problems that most states and local governments are currently facing, I do not think they are in a position to pick up new energy functions overnight. In fact, under the current budget proposal, 37 of 50 state energy offices could be eliminated. This is an action that would destroy the partnership and undermine confidence between the Federal, state and local governments.

The Reagan Administration simply has moved too quickly in phasing out Federal involvement. This phase-out should have occurred over a period of years, say five for example, with the state's share of costs gradually increasing. The 21 states with biennial budgets probably will react by cutting back on energy staff and programs in the short-term.

The first activities to be phased-out by states will likely include all or most of the Federal energy programs administered by the states. In blunt terms, the money is just not there. You can expect the Energy Extension Service, Residential Conservation Service, Emergency Energy Conservation Planning, to name a few, to end.

Local governments can only pick up new functions with some source of funding, be it Federal or state, or local taxing policy, and I think that all three of these potential sources will not be able to provide the resources needed to keep these current conservation programs operating.

Information exchange will be severely curtailed, both by the closing of DOE Regional Offices and the severe curtailment of DOE outreach and training grants. I think it will be up to the governmental public interest organizations to form "networks" to continue the exchange of data. However, even these "networks" will suffer because many of the Federal grants for energy outreach have been cut.

In regards to alternative financing for energy conservation, certainly the private sector will not help out. Conservation runs contrary to their philosophy of produce and sell. Tax incentives and tax credits are fine except they have no relevance to the poor who pay no taxes. One of the best alternative financing plans that I have seen is the proposal being advanced by other state and local government groups to establish a separate energy block grant to preserve Federal spending for energy conservation and give states and localities more latitude in using the money. I tend to agree with this quote from Mayor Walsh from Warwick, Rhode Island who said:

> The Federal Government cannot and should not dictate how we run our cities ... However, there is a Federal responsibility which cannot be abandoned.

I next want to look at the weatherization program. I am very concerned over the current Reagan Administration proposal. To fold the weatherization program into the Department of Housing and Urban Development's Community Development Block Grants, with no accompanying transfer of funds for weatherization, and in fact an overall decrease in CDBG funds. This move will virtually eliminate the weatherization program for low-income households.

The current delivery mechanism (Federal categorical grant to the state, which contracts money to local agencies), has proven effective. It assures even provision of services, greater quality control, and more effective training and monitoring of the personnel providing weatherization services. Local agencies already are given much authority in running the program, with the state primarily as administrator of the program.

I have the following concerns about the proposal to fold weatherization into local CDBG funds:

1. The primary purpose of Community Development Block Grants and the purpose of the weatherization program are different. The purpose of the CDBG program is to develop communities according to the various developmental needs in the individual recipient communities. The purpose of the weatherization program is to help those with limited resources to conserve energy.

2. Some areas of a state, particularly rural areas, would receive no weatherization funds at all, since CDBG funds are distributed unevenly in states, with the bulk going to cities and towns. In Region III, for example, 38 percent of eligible clients live in rural areas, ranging from 20 percent rural in Maryland to 81 percent rural in West Virginia.

B. IMPLEMENTATION ISSUES

(1) At this point, I don't think it is really clear who the new sponsors will be. If it turns out to be local government agencies, I think the potential will exist for a serious weakening of the program.

(2) Low income energy assistance funds should not be used for Weatherization. The programs have two separate goals. Many local community action agencies have coordinated the programs by requiring individuals receiving energy assistance funds to have their homes weatherized. I think this is very important.

(3) The method of program operation over the last year is the most effective approach. Experience in Region III demonstrates the advantages of administering the weatherization program from the state level. When the original CSA weatherization program began operation in 1975-1976, the Region III states were the only states in the nation funded on the state level. Funding for other states went directly from the Federal government to individual local agencies. The states in Region III were soon far more productive than other weatheri-

zation program in the nation. Local agencies in the states in Region III had the highest material quality standards, most efficient crews and paid less for materials than other regions. Since 1976 in Region III alone, 115,000 homes have been weatherized, at a current average materials cost per unit of $450.00. I think the current approach of making available $1,000 per unit makes the most sense and is the most cost-effective method.

(4) It certainly would be difficult to move CETA workers into the industry. For one, some CETA workers do not have the skills that are needed for them to be hired by private building contractors. Many CETA workers would be displaced, but others would have the chance to continue working because they already possess the necessary skills. This question needs much more study.

The Low Income Energy Assistance Program, not part of a block grant, should maintain its own separate identity. Providing financial aid to the poor is too important a task to dilute by allowing these funds to be used for other functions.

Before I close my remarks, I just want to say this: I think efforts to aid the poor with their energy needs will receive priority attention in the Congress. If-low income assistance efforts are curtailed, cruel decisions must be made - the heat or eat scenario. "Conservation through price", the cornerstone of the Reagan program, is not a viable option for the poor.

Information should be collected by DOE to at least keep tabs on what is available in each state. I think surveys of government, companies and homeowners makes sense. However, I still don't believe that the Federal role should end with just surveys.

Probably the most important study that could be undertaken would measure the relative position of the low income now in regards to energy, and then compile information monthly to see if individuals are getting better off or worse off. This kind of data would help government bodies and citizens know whether the Reagan energy policy is living up to its promises.

In closing, Federal conservation programs should be the backbone of our national energy policy. As a nation, we never have produced all of our energy needs and we probably never will. Remember, even though we only obtain about 15% of our oil requirements from the Persian Gulf, in the even of a global cutoff, we would lose 35 to 45% of our total requirements because of our participation in an International Energy Agency agreement which requires the sharing of the remaining supply among all members. According to a recent Lawrence Livermore National Laboratory study, such a sudden reduction in U.S. oil supplies could trigger the worst economic reversal the nation has suffered since the depression. Conservational programs are important and they cannot and should not be eliminated.

Thank you.

DR. RIEGEL: Thank you, Mr. Dorsey. I turn now to the panel for questions and discussion.

MR. GLASSBERG: I have a question for Mr. Maggiore. Is the present weatherization program too restrictive either in the legislation or the regulations with respect to the types of weatherization activities that can take place?

In other words, is the program too oriented toward certain types of activities that might be more applicable to the Northeast, Midwest and not as applicable to South Carolina or Arizona in different types of building construction, and, also do you have any data on what the implications would be for a reduced funding level for the weatherization program down to $150 million, and what that would mean in terms of reduced levels of weatherization?

MR. MAGGIORE: In terms of the guidelines, they are a bit restrictive and not as applicable in a minor way though, not a major way, to South and Southwest and to big and small cities.

One of the problems that has existed in the weatherization program from its inception is weatherizing dwellings in large cities. That has not been adequately addressed.

Let me say this, though, the program has dramatically improved by at least 300 percent in comparison to what it was. The administration on the part of the DOE staff now is very decisive. It was quite different than the previous program. So though it's improved, areas of future improvement in my estimation would be some of the specifications as it relates to the part of the country you live and whether you live in small cities or big cities, small towns and big cities.

Relative to the funding level, the DOE during 1980 weatherized 311,000 homes, a dramatic increase from the previous year when the program was plagued with problems, literally almost double the number of homes in 1980.

At the current DOE spending level ($300 million at least for the past six months at that rate), if the funding level was $150 million, the current effort would be cut in half. That is assuming that in the event, the block grant for energy assistance went through and if there was a limitation or percentage there they could use for weatherization, that might reduce the nature of the cut on a state and local level, but by and large I would say at this point, a minimum of 50 percent based on two reasons -- one, current level of funding for the last six months; two, the reduction of CETA slots.

With the reduction of CETA slots, it's a minimum of 50 percent reduction at $150 million. In fact, to be precise, I might say it's a 60 percent reduction. We can't underestimate the impact of the CETA dollars that have been phased out. and are being further phased out by the end of September. So it's probably close to the 60 percent reduction, and that means not only in dollars, but in production as well.

DR. RIEGEL: I have a question for Mr. Dorsey. You correctly point out that the weatherization program and the Low Income Energy Assistance Program have quite different objectives. Meanwhile, we find ourselves this year contemplating shrinking resources and perhaps the necessity of addressing ourselves to making trade-offs in areas where it is sometimes not entirely attractive to do so.

A witness who appeared before you, Richard Kline, suggested that investment in the weatherization program was in a sense more meritorious for the long term than the low-income assistance program, and also made remarks about the relative funding levels of the two programs.

Do you have any additional comments on the balance between those two?

MR. DORSEY: Well, I'd just like to state that they are both equally important, in light of the forthcoming -- potential forthcoming legislation regarding the deregulation of natural gas, where it's been predicted that for all consuming groups across the nation, the costs will double by next year if there were immediate deregulation. With that, and the rising fuel oil costs, without an immediate continuation of the weatherization program, you will find the low-income families who are the ones who are most in need of weatherization will be spending not only more for their fuel costs, heating costs, but a greater percentage because of the inadequate shape of the housing that they're using.

So we believe it's very important that the two have to go hand in hand; one, to cut down on the waste of energy with the weatherization program, and, two, to offset the immediate impact of deregulation on low-income families. We have to continue with low-income assistance. So I would say it would go hand in hand.

MR. POWER: I'd like to ask Mr. Robinson about the regional energy planning mode. I was curious about that. One of the effects of the phase-out of state programs will be to reduce the amount of information coming to us on what the states are planning to do, how they see their individual situations.

Do you see a way that that might be undertaken on a basis other than having the Federal government sponsor it?

MR. ROBINSON: I think that it might need an initial kick-off by the Federal government, but once it was in place it would be self-supporting.

I talked to about 40 towns in my area, and they have objection to a subscriber fee of a couple of hundred a month. In a lot of cases, these towns are small and have no data processing equipment and could use it.

This would give them an excuse to buy it and make use of it through word processing or accounting as well as receiving energy information or community development information that they don't have.

I find myself doing a great deal of research finding information and the town next-door doesn't have it. I see no reason not to have an information clearinghouse, and when presented by, say, electronic mail, it could just go through say a chief executive officer of the town or city manager for executive decision. Here's the information, are you interested? Here's the information we would like. It could be interactive. So you could find out just what is going there.

The government has a habit and is very good at compiling statistics, but the information often dead ends; it's not put to use, and the statistics can be very valuable to indicate trends or opportunities of many different natures.

This represents a savings to the towns, because to set up a local energy office costs $30-100,000 a year. The trend in the face of budget cutting, say take Joe Purchasing Agent, and, say, hey, you're the energy manager. The guy is already doing a full-time job; so as a consequence nothing happens.

If, for a nominal subscriber fee, they can have the information available on the executive level where it would go anyway, if you have an energy manager looking for information, he still has to present it to the chief executive. This way, you're shortcutting the whole routine.

DR. RIEGEL: I'd like to thank the panel, and then inform you that there's been a slight schedule change. We have one final witness, Mr. Neal Gale of Philadelphia.

MR. GALE: My name is Neal Gale, and I am speaking today out of my concern for the well being of our planet.

The purpose of my testimony is to expand the focus of these hearings beyond the question "can energy conservation programs survive the withdrawal of Federal support?" It is not that I think that this question is unimportant. I am sure that many people will answer it competently, and show that energy conservation will be diminished. This undesirable result must be addressed, and I acknowledge those who have undertaken this task. They have given me space to carry the discussion further.

I want to include a look at the more distant consequences of this turnabout in our national energy policy. The shift away from conservation and renewable resources is manifest in the proposed Department of Energy budget - which includes more money for the nuclear industry and less money for conservation and renewables. The justification for this is found on page five of the issue paper for these hearings; point five of the guidelines established to form the third National Energy Plan:

> "Federal public spending for enrgy purposes should be limited to those areas where the private sector is unlikely to invest sufficiently, such as in high cost, long lead time technologies, with substantial prospects of high payoff. Public spending should not be used to subsidize domestic energy production and conservation since this buys us little additional security, and diverts capital, workers and initiative from more productive uses elsewhere in the economy."

This position is enhanced by the stated intention of the Department of Energy to allow free market forces to determine the viability and growth of energy technologies. The result is that conservation and renewable resources will not be supported by the Federal Government, while the nuclear industry is clearly given a leg up. This is a dangerous hypocrisy.

We are being asked in these hearings to identify the effects of this program on energy conservation. I think that it is important to look at the entire picture, and ask what will be the results in terms of the survivability of the planet.

In as much as the Federal government disseminates information, swaying public attitudes, the open abandonment of energy conservation and renewable resources, in favor of the nuclear industry, is wrong. It demonstrates tacit approval of the industry, and effectively turns attention away from the questions surrounding nuclear development.

What is generally unspoken and unquestioned is that the reduction of government support for energy conservation programs is being accompanied by the silent commitment to a nuclear future. Such a commitment is permanent. The consequences will be with us virtually forever. That is why we must consider all aspects of this choice. The people who will inhabit that nuclear future will not be able to turn back - to choose a non-nuclear world. We are choosing for them.

I am not pretending to be an expert in the field of nuclear energy, and I realize that I am stretching the stated purpose of these hearings by including a statement about it. I believe, however, that we can no longer afford to pretend that we can ignore this problem. It will not disappear by magic or science or faith or luck. We must take responsibility for it now. This requires a willingness to own the problem in a personal way. To examine the problem with an open mind - being guided by the truth that is revealed there. Not to dismiss the problem as someone else's.

I would like to suggest a few topics to facilitate such an examination by anyone seeking this responsibility:

* The infringement of civil liberties by the military and /or intelligence agencies,in an atmosphere of nuclear terrorism and sabotage.

* The possibility of civilian nuclear power plants being used against U.S. citizens, by hostile foreign governments, in time of war.

* The on-going poisoning of our food and water supplies, with plutonium and other nuclear byproducts.

* The increasing probability of nuclear annihilation as nuclear weapon technology and materials are exported around the world.

DR. RIEGEL: All right. Discussion? Thank you very much for appearing with us today. I'd also like to extend my thanks to the panel for assisting EPA in the Section 11 review this year. As I pointed out, these hearings are more crucial to the Section 11 proceedings than in years past, because there has been no prior workshop activity leading up to these hearings.

We will be looking at all of the formal statements and at the discussion very closely in preparing our final report.

(Whereupon, the meeting adjourned at 4:55 p.m., July 14, 1981.)

PROCEEDINGS
JULY 15, 1981
MORNING SESSION

HEARING PANEL

Kurt Riegel	Acting Director, Office of Environmental Engineering and Technology Environmental Protection Agency
Eugene Frankel	Professional Staff House Science and Technology Committee
Ted Kapus	Deputy Director Buildings and Community Systems Office of Conservation and Renewable Energy Department of Energy
Gregory Ondich	Section 11 Program Manager Environmental Protection Agency

WITNESSES

Carroll Benson	Dallas Power and Light Company
David Davia	Public Service Company of Colorado
Richard Russell	Edison Electric Institute
Sheldon Cady	Mineral Insulation Manufacturers' Association
Karen Anderson	American Public Power Association
Robert Naismith	Potomac Energy Group
Robert Manahan	Thermal Insulation Manufacturers Association
Richard Esteves	General Public Utilities Corporation

DR. RIEGEL: Good morning. I'd like to welcome everyone here this morning to the hearing that the Environmental Protection Agency is conducting this year under Section 11 of the Federal Nonnuclear Energy Research and Development Act.

This is the act that created the Energy Research and Development Administration in 1974 and and that contained the so-called "Section 11" provision, charging the Council on Environmental Quality to review annually the programs of the Energy Research and Development Administration, now the Department of Energy, with respect to the adequacy of treatment to both conservation and environment.

That responsibility was transferred within the executive branch from the Council on Environmental Quality to the Environmental Protection Agency in 1977. This year's Section 11 review is the fourth annual review that we have conducted of Department of Energy programs.

From year to year, we have shifted focus from one part of the energy research program to another, and this really represents the second look that we have made at the conservation element of the program. We feel it is particularly appropriate to look at the Federal conservation programs this year, because the Administration has announced fundamental new directions in pursuit of our national energy objectives. A conspicuous feature of that new direction is de-emphasis of Federal involvement and investment in conservation, but with a reaffirmation of the importance of conservation in the national picture and a public statement by the Administration that conservation responsiblities most efficiently and effectively are to be picked up by state and local governments and the private sector.

A fundamental purpose of this year's review then is to address this problem of transition of a rather large and ambitious Federal program to one which is less resource-intensive, but which nonetheless intends to have a large and important impact on the energy picture for this country.

Just a few words about how we would like to run things this morning. Many of the witnesses, who incidentally represent a very diverse set of backgrounds and experience, will arrive with prepared statements. I assure you that these statements will be put into the official record of this hearing.

I would ask the witnesses to the extent that that they can to summarize those prepared statements so that we can turn rather quickly to questions and discussion involving members of the panel.

I'm Kurt Riegel, from the Environmental Protection Agency. At my far left is Greg Ondich, who is also with the Environmental Protection Agency and has been the Program Manager for this year's Section 11 process. Representing John Millhone from the Department of Energy is Ted Kapus who will be here for at least a portion of this morning's proceedings. He is the Deputy Director for the Buildings Conservation Program; and then finally, to my immediate left is Eugene Frankel, from the House Science and Technology Committee.

With no further discussion then, I would like to turn this morning to our witnesses.

We will begin with Mr. Carroll Benson from Dallas Power and Light.

MR. BENSON: Thank you. I'm Carroll Benson, Director of Program Development for Dallas Power and Light Company, and by way of information, DP&L is a metropolitan utility serving approximately 450,000 customers in the city limits of Dallas, Texas.

We appreciate the opportunity to be here this morning and to discuss the changing role of the private sector in future conservation activities. Before I begin that discussion, I'd like to say that we have no serious quarrel with the public discussion package for the third national energy plan that was published by DOE in March of 1981.

Despite the events of June 26 in the House of Representatives, we are convinced that the underlying assumptions of the Administration regarding a return of these responsibilities to the private sector are correct and that in the final analysis the roles of government and the private sector will be restructured.

The focus of this hearing, as we understand it, is to evaluate the role and reaction of the private sector to this change in philosophy, and particular emphasis has been requested by EPA on preparations for assuming these new responsibilities, which activities will receive priority, what new initiatives or opportunities may develop, and finally what the Federal government's proper role may be and some methods for the government to monitor the effects of this new direction.

Addressing each of these in order, I would have to say that DP&L has had some difficulty in determining any new responsibilities. We've been a leading advocate of wise energy usage for many, many years, and in fact, our company was recognized by the President in a White House ceremony in January 1981, and I'll quote, "for its outstanding contribution to America's economic and national security through exemplary leadership in the national effort to achieve energy efficiency."

I offer this comment on the President's Award for Energy Efficiency not as a brag on our part, but as evidence of our early and continuing commitment to wise energy use. The award was based on over 30 distinct conservation oriented programs offered by DP&L to its customers, none of which were required by any, and I'll repeat, any governmental entity.

Our programs emphasizing wise energy use and the controllable relationship between energy usage and cost will continue to receive priority emphasis in all of our customer communication programs. Those programs which have particular significance in terms of peak demand reduction and/or load factor improvement will receive emphasis.

The philosophical shift in the government's energy program emphasis proposed by the Administration has not directly created any new initiatives or opportunities for our company, but may in the future as institutional and regulatory barriers to program operation are removed.

Specifically I'm referring to innovative cogeneration and small power production options that may be available, as well as the opportunity for creative financial incentives and conservation measure installation programs.

Although the opportunity was not created by government disinvolvement, I would like to take just a minute to desribe DP&L's latest program.

Panel members, the same chart is in the back of your package. Effective May 4 of this year, the Dallas Power and Light Company through its Your Energy Share Program began assisting customers with the purchase of high efficiency cooling and heating heating equipment as well as solar and heat recovery devices to supplement electric water heating systems. (See Tables 1 and 2).

Your Energy Shares are monetary incentives to help customers offset the increased cost of high efficiency equipment and can be applied as payment on the customer's electric service bill. As the cost comparison in Table 3 illustrates, replacement of a four-ton central cooling unit with a SEER of 6.0 in a typical home in Dallas which has gas heating with a similar sized heat pump with an EER of 8 will yield a net payback to the customer in less than five years at current energy costs, and thereafter produce a net annual energy savings of better than $400 per year using current dollars.

Those numbers include the Your Energy Share incentive, which is shown down at the bottom and in this case would be $320, or $80 per ton. That's a certificate that we actually provide to the customer which he can use to pay his utility bill.

RESIDENTIAL

TABLE 1

YES
YOUR ENERGY SHARE

How Does It Work?

1. When you buy equipment* that meets YES Program standards, you become eligible for Your Energy Shares.
2. Your dealer or contractor will provide a form for you to send to DP&L.
3. A DP&L representative will contact you to verify installation.
4. After verification, DP&L will send you Your Energy Shares that you can redeem for electric service.

* Installed after May 3, 1981

How To Earn Your Energy Shares

The more energy efficient the equipment, the more energy shares you will receive. Equipment that qualifies for the YES Program is based on its efficiency rating. See reverse side for details.

New Homes

To qualify under the YES Program, new houses, condominiums and apartments must be certified energy efficient according to DP&L's E-OK rating system. Ask your builder about E-OK standards, or call a DP&L representative at 698-7000 for a free E-OK booklet.

DP&L

YES
YOUR ENERGY SHARE

YOUR ENERGY SHARE INCENTIVES

AIR CONDITIONERS

	Efficiency Rating of 8.5-10.49	**Efficiency Rating of 10.5 and higher**
Central systems	$60 per ton	$120 per ton
Window units 12,000 Btu and below	$60 per unit	$120 per unit
Window units 12,001 Btu and above	$100 per unit	$180 per unit

HEAT PUMPS

	Efficiency Rating of 8.0-10.49	**Efficiency Rating of 10.5 and higher**
Central systems	$80 per ton	$140 per ton
Window units 12,000 Btu and below	$80 per unit	$140 per unit
Window units 12,001 Btu and above	$120 per unit	$200 per unit

Solar-assisted Electric Water Heating
$120 per system or device

Heat-recovery System for Electric Water Heating
$120 per system or device

Example

Credit:	$60/ton with efficiency rating of 8.5-10.49
Example:	4 ton with efficiency rating of 9.0 4 X $60 = $240 $240 Energy Share Credit to Customer

7-81

NATIONAL ENERGY WATCH

MULTIFAMILY

TABLE 2

YES
YOUR ENERGY SHARE

How Does It Work?

1. When you install equipment that meets YES Program standards, you become eligible for Your Energy Shares.
2. Your dealer or contractor will provide a form for you to send to DP&L.
3. A DP&L representative will contact you to verify installation.
4. After verification, DP&L will arrange for Your Energy Shares to be credited to your electric service account.

How To Earn your Energy Shares

The more energy efficient the equipment, the more energy shares you will receive. Equipment that qualifies for the YES Program is based on its efficiency rating. See reverse side for details.

New Construction

To qualify under the YES Program, multifamily units must be certified energy efficient according to DP&L's E-OK rating system. Ask your representative about E-OK standards, or call DP&L at 698-7528 for E-OK information.

DP&L

YES
YOUR ENERGY SHARE

YOUR ENERGY SHARE QUALIFICATIONS

AIR CONDITIONERS

	Efficiency Rating of 8.5-10.49	**Efficiency Rating of 10.5 and higher**
Central systems	$60 per ton	$120 per ton
Window units 12,000 Btu and below	$60 per unit	$120 per unit
Window units 12,001 Btu and above	$100 per unit	$180 per unit

HEAT PUMPS

	Efficiency Rating of 8.0-10.49	**Efficiency Rating of 10.5 and higher**
Central systems	$80 per ton	$140 per ton
Window units 12,000 Btu and below	$80 per unit	$140 per unit
Window units 12,001 Btu and above	$120 per unit	$200 per unit

Solar-assisted Electric Water Heating
$120 per system or device

Heat-recovery System for Electric Water Heating
$120 per system or device

Example

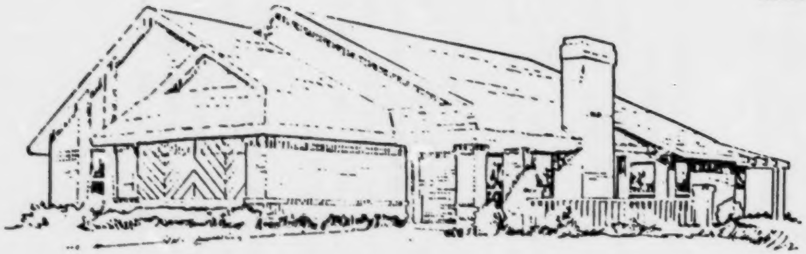
Credit: $60/ton with efficiency rating of 8.5-10.49

Example: 2 ton with efficiency rating of 9.0
2 X $60 = $120
$120 Energy Share Credit per unit

7-81

NATIONAL ENERGY WATCH

TABLE 3



SIZE: 2000 square feet

COOLING UNIT: 4 ton (6.0 SEER)

GAS HEATING

INSULATION:
ceiling : R-13
walls : R-7
floor : none

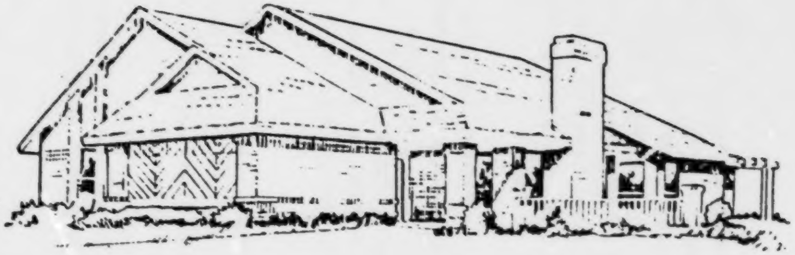
THERMOSTAT SETTING: 78° summer
72° winter

HEATING USAGE: 875 ccf
HEATING COST: $333 per season

COOLING UNIT USAGE: 11,200 KWH
COOLING COST: $728 per season

COOLING UNIT DEMAND: 8.0 KW

COST TO REPLACE COOLING UNIT WITH SAME EFFICIENCY: $1,200



SIZE: 2000 square feet

HEAT PUMP: 4 ton (8.0 EER)

INSULATION:
ceiling : R-13
walls : R-7
floor : none

THERMOSTAT SETTING: 78° summer
72° winter

HEATING USAGE: 6,156 KWH
HEATING COST: $215 per season

COOLING UNIT USAGE: 8,400 KWH
COOLING COST: $546 per season

COOLING UNIT DEMAND: 6.0 KW

COST TO REPLACE COOLING UNIT WITH HEAT PUMP: $3,000

YES INCENTIVE: $320

PAYBACK: $3000—$1200—$320 = $1480 / $ 300 = 4.9 years
(heating savings: $118
& (cooling savings: $182)

At the same time this efficiency changeout occurs, DP&L's summer systems peak, is reduced by 2 kilowatts. We can consider this system peak as permanently deferred construction and ultimately it will lead to a reduction in the need for future facilities expansion. It will improve our existing equipment utilization, and it will reduce our requirements for new capital, actions all of which slow the rise in energy costs faced by the company's customers.

In the second example (see Table 4), just changing the air conditioning results in a net 2.1 year payback and thereafter a $273 seasonal savings in cooling costs. Again these are based on current dollars. This replacement, from a unit with 6 SEER to 9.6 SEER equipment, will reduce DP&L's system peak by 3 kilowatts and can also be considered as permanently deferred construction.

The same incentives are available for new construction meeting DP&L's National Energy Watch E-OK Home Conservation Construction Standard -- a standard, incidentally, which exceeds the levels required by the Residential Conservation Service and which was instituted two years prior to the passage of NECPA. Meeting the conservation construction standard also allows for smaller equipment sizing, yielding yet another increment of peak demand reduction.

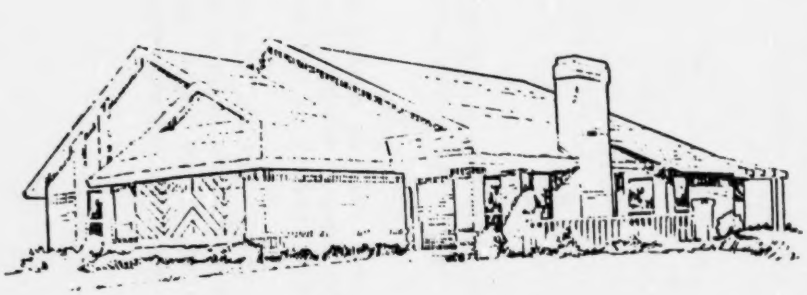
The YES program is applicable to all residential housing, including multi-family, and has been highly successful in its first two months of operation.

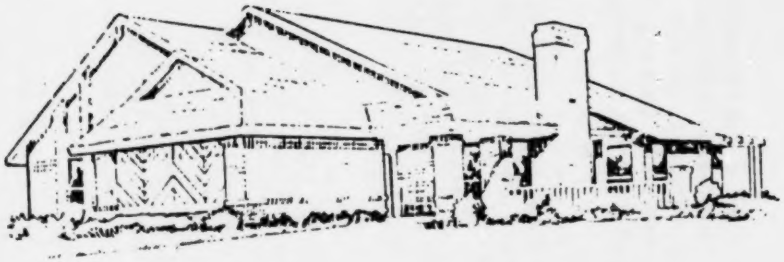
Within the next month, DP&L will institute its newest Your Energy Share load management activity for all customers. In this program DP&L will pay the cost differential between popular and high efficiency lower wattage fluorescent lamps. Payment will be made directly to dealers and distributors of lamps, and within six months to one year we expect that regular fluorescent lamps will no longer be stocked in the Dallas area.

Other peak reduction load factor improvement programs may include demand limiters, sharing interruptible loads between groups of buildings, radio controlled and temperature sensitive demand limiting of non-critical loads, such as electric water heating and swimming pool filter pumps, as well as thermal storage systems for large building air conditioning.

The overall goal of these load management programs is to reduce the Dallas Power and Light system peak by 206 megawatts in 1985. Your Energy Shares is a part of an overall Texas Utilities Companies System goal of reducing the 1985 peak by 1000 megawatts, the equivalent of one large power plant.

TABLE 4





SIZE: 2000 square feet

COOLING UNIT: 4 ton (6.0 SEER)

INSULATION:
ceiling : R-13
walls : R-7
floor : none

THERMOSTAT SETTING: 78° summer

COOLING UNIT USAGE: 11,200 KWH
COOLING COST: $728 per season

COOLING UNIT DEMAND: 8.0 KW

COST TO REPLACE COOLING
UNIT WITH SAME EFFICIENCY: $1,200

SIZE: 2000 square feet

COOLING UNIT: 4 ton (9.6 SEER)

INSULATION:
ceiling : R-13
walls : R-7
floor : none

THERMOSTAT SETTING: 78° summer

COOLING UNIT USAGE: 7,000 KWH
COOLING COST: $455 per season

COOLING UNIT DEMAND: 5.0 KW

COST TO REPLACE COOLING
UNIT WITH HIGH EFFICIENCY: $2,000

YES INCENTIVE: $240

PAYBACK: $\frac{\$2000-\$1200-\$240}{\text{(cooling savings: \$273)}} = \frac{\$560}{\$273} = 2.1 \text{ years}$

We view the proper role of government as a facilitator and information exchange medium for new and innovative initiatives. In those areas where barriers exist, government should seek ways to assist in their removal, and rather than talking about the reasons why ideas won't work, we need to work together to discover how they can be made to.

We need an unbiased information exchange regarding what is being done, how and where it's being done, in order to stimulate additional activities. We also view the government's role as that of a goal and objective setter for a rational and coherent energy future, not as a specifier of how to achieve those goals and not as an advocate for any particular favored source of energy.

Evaluation and monitoring are always difficult and thorny issues, and we suggest, however, that the private sector makes its living through evaluation and monitoring of its activities to determine which are profitable, and, therefore, to be initiated or continued. The private sector, therefore, is in an excellent position to provide suggestions on specific programs, suggestions which may have more merit and practicality than those proposed by government personnel or their paid consultants.

We earnestly solicit the opportunity to help evaluate proposed and active programs and to be involved in the decision making process through participation, advisory commitees, task force activities and other avenues of cooperation.

Rather than rehash past successes and failures, we prefer to look instead to the future, a future which portends an era of improved cooperation, innovation and shared achievements between government and the private sector. In the final analysis, we have the same objective in view -- a stable, growing economy which is not dependent on foreign suppliers for significant portions of our energy.

The only practical way to get to that point in our judgment is to unleash the creativity of American free enterprise. Thank you.

DR. RIEGEL: Thank you very much. We, of course, will be coming back with questions and discussion, but right now, I would like to move on to David Davia from Public Service Company of Colorado.

MR. DAVIA: Thank you. First, I would like to thank EPA and the government for asking for this review and for showing concern with this country's energy future. As stated, I am David Davia with the Public Service Company of Colorado. We are a combination gas and electric utility with a total of 820,512 electric customers and 680,615 gas customers. We serve approximately 70% of the population in the State of Colorado.

During May, 1981, our average residential cost for electricity for customers in the Denver area was $.059/kWh; gas was $3.59/mcf ($.43/ therm) this compared with $.04/kWh and $2.54/ mcf just one year ago.

Currently, we have 100 field representatives involved with residential audits and conservation; 30 field engineers doing commercial audits and other conservation activities; 7 employees working full time in our Conservation Center and 10 employees in Training and Program Development working on training for our residential auditors. In addition, we have a gas lab and other various support groups.

Our experience with residential conservation is as follows:

*Residential R-30 Attic Insulation Program (started September, 1975)

75,000 homes inspected
34,500 homes insulated under our program
75 contractors used to install material
Gas use reduced by 12% overall (corrected for weather)
Approximately 40% of jobs sold financed on monthly utility bill

*Air infiltration test involving 90 homes
Final Report 3rd quarter 1981

*Furnace derate and testing on 90 homes
Final Report 4th quarter 1981

*Residential Audit Program started in 1979
20,893 audits requested
15,633 audits complete
4,973 request cancelled

*RCS type audit with computer assist started May 1981
4,419 audits requested
1,216 audits complete
309 request cancelled

*Conservation Center, Conservation Booklets, and Customer Programs in the last 12 months:
(started January, 1980)
16,706 customers have visited the center

33,746 customers have called for conservation information
266,238 customers have entered conservation product drawings
35,637 conservation brochures picked up or mailed out

Under general question Number One, you ask, "How are private firms, state governments, and local agencies preparing to assume their new responsibilities?"

First of all, we do not feel these are "new responsibilities", we had these responsibilities before NECPA and we will have them after RCS and all other programs have run their course. We feel that since 1975 our company, along with the Edison Electric Institute, the American Gas Association and many other utilities, displayed extreme innovation with marketing conservation. Remember that a regulated utility is the most efficient way to provide gas and electric service to customers. In the past when each new power plant added to the system meant lower rates for everyone, utilities were out marketing for more growth. Now that we see today's market 180° changed from the past we see utilities marketing conservation very actively.

We at Public Service feel that our existing programs would be much further along had we not had to take the last two years to develop and comply with the RCS Program.

Whatever happens to RCS, CACS, REEP, or BEPS we will continue to deal with our customers in maximizing their energy efficiency while managing demand and cost through whatever programs are necessary.

If I may digress for a moment and report that conservation in our area is occurring mostly with natural gas. We have seen a substantial reduction in gas use for space heating and water heating. This is supported by an American Gas Association (AGA) report dated March 20, 1981, that showed, and I quote, "The highest rate of decline in gas consumption was 3.6% per year in the mountain region". Our own data supports that finding -- we show from 1973 to 1979 a reduction in gas use of 3.5% per year.

The electric side of our Company shows just the opposite is happening. We see electric use increasing both as a function of more use per customer and also growth due to steady in-migration to our energy areas. In our 1979 statistical review we see average annual residential consumption in 1979 at 5913 kWh's, up from 4,621 kWh's in 1969. This is due to increased appliance load and increased saturation of new types of appliances. The following numbers point to some of the problems:

water bed heaters - 12% saturation
second refrigerator in use - 14.7% saturation
second food freezer in use - 3.8% saturation

These along with a greater dependence on electrical energy show demand problems which are not being addressed fully by any Federal program. Our problem is with demand more than energy.

As to your question Number Two, "Which activities will get priority form public and private organizations and what will be the consequences if some activities are discontinued?"

We feel an energy audit done on site with the homeowner is the best way to diagnose the energy ills of a home. Although most people feel that conservation is labor intensive, which it is, it is also education intensive. Therefore, we will continue to pursue programs like the Residential Home Energy Audits which completely evaluate the customer's thermal envelope, appliance use, general conservation opportunities, load management, habits habits and attitudes. These programs will be supported additionally by our Conservation Center with its state wide hotline, conservation booklets and programs for group presentations designed to meet the needs of particular groups through proper education. We are now training 60 auditors to do audits in low income housing in the Denver area and have also done a master conservation program and low income grant writing program.

An issue which continues to get greater interest by our company and many other companies is residential space heating equipment. We have found that existing equipment has a number of problems which include oversizing, seasonal efficiencies of 45% to 65% with some as low as 30% and very poor or non-existent maintenance.

We are removing our test equipment on 90 derated furnace sites and are currently developing a furnace tune-up program, both of which should show us the most cost-effective way to direct future conservation efforts in this overlooked area of heating equipment.

Of note here is the fact that in the field of energy conservation and solar heating the government has encouraged activity in the hardware arena. We do not agree with this policy because customers may buy the big ticket item for its tax value and completely miss the boat on energy savings. A good example here are storm windows. We know that in most cases caulking and weatherstripping are much more cost-effective than an additional pane of glass. Most buyers never check for such things as thermal breaks or infiltration rates and thus buy windows which do not perform. The homeowner is left with two panes of glass to maintain but no reduction in energy used. The solar buyer in Colorado is motivated by statements like, "Buy solar for its 70% state and federal benefits". Also, because the solar credit is 70% and the conservation credit is only 35%, solar must be of greater importance, at least that is what the homeowner thinks. We know this is not the case. Nevertheless, many people are doing one of two things. Either they do solar installations before any conservation is addressed or they are waiting for a solar "miracle" and not doing any conservation at all.

The one glaring error in this entire program is that gas furnaces are not addressed straight on. You are encouraged to fix what you have by adding a vent damper or an electric ignition", but this at best is just using the "band aid" approach. If we could initiate some sort of incentive replacement program that would encourage existing 45-65% seasonal efficient heating equipment to be replaced with newer appliances which are available, are 85-95% efficient and replacement of these older units looks cost-effective in today's market.

Point Three, "Have any new initiatives or opportunities been created as a result of the shift in Federal energy conservation programs?"

The initiatives and opportunities have been for those people or organizations who do not fall under one of these "cradle to grave" Federal programs.

As a result of the RCS listing requirements and $15 price limit, we have seen many companies want to contract for services, want to be consultants, offer computer software and offer solar site selectors. Auditing companies which we do not wish to use in our program threaten law suits. Contractors yell "foul" as to the way the state originated and maintains the master list.

Initiatives and opportunities? No. It's more like confusion and aggravation with constant change.

Point Four, "What is the Federal government's proper role in the period of transition?"

We feel that the government should do more directing in the area of education, product specification and results. Utilities along with the private contractors can develop the necessary programs and procedures needed to carry out conservation and load management.

Although this argument has been used and used again, the market system works and works well. As the price goes up, usage goes down. We know that people need energy as much as food and other essentials. But the fact still remains that we are living in homes that still waste 30% to 50% of the energy purchased. Until this pattern of waste is changed the buying public will continue to be frustrated by higher monthly bills.

Utility companies have been, and are, very willing to help. It's much easier to talk to a customer about conservation rather than a high bill. But if everyone is recommending storm windows and insulation and the installed products do not perform, or are unsafe or installed improperly, no one is any further ahead. If conservation and load management are not done right the first time, they will have to be redone.

If the government would educate the potential buyer about how and what to buy and not spend all your regulatory effort with people watching the way other people are doing a job, success would be of much greater magnitude.

Utilities are not banks; we are not code bodies. By our granting loans and doing inspections, we duplicate services which are already available. Audits and conservation informtion should be done by utilities. The sale of equipment to correct problems and improve efficiency should be left to the private sector.

Point Five, "How should the Federal government evaluate and monitor the effects of its new energy policies and program changes?"

If you are doing conservation programs, you should make sure they are cost-effective, are supported with customer demand and have results with measurable reduction in peak demand or energy used. Each region should be monitored to see what results are being attained.

As stated earlier, this company along with many other utilities are very interested in load management, conservation, improved efficiencies, and and customer attitude. We will continue to strive for improvement in all these areas. It's a big job that utilities, government agencies, and the consuming public all have a very important role in.

I feel that the low income people need immediate help not with paying bills, but with reducing energy waste in their homes. I know programs like the Low Income Energy Assistance Program (LIEAP) are necessary for the interim but they should not be the only cure. LIEAP recipients should have audits and have weatherization done, in addition to financial help.

Weatherization programs should be run by agencies looking for results -- not jobs. We worked on low income projects where the manager of the program was more interested in getting a grant for a computer than reduced energy use for the poor people he should have been helping. We have seen programs where bad material and poor management add future problems. These programs do not get the results our tax dollars are being spent for.

In summary, we feel that utilities have a place in conservation doing audits and customer education. The RCS program should be modified to reduce the burden on utilities. Items like contractor list, follow up inspections, arranging loans and installations and massive recordkeeping should be removed. Flexibility on a regional or state-by-state basis should be stressed.

The government should reduce and modify its role in trying to be all things to all people, and allow each region of the United States to respond to this common problem of energy conservation and load management in a way that brings results and an eventual solution to this menacing problem.

Thank you.

DR. RIEGEL: Thank you. We now turn to Mr. John Russell from the Long Island Lighting Company.

MR. RUSSELL: Thank you. My name is Jack Russell, Vice President of the Long Island Lighting Company and Immediate Past Chairman of the Customer Relations, Conservation and Energy Management Executive Advisory Committee of the Edison Electric Institute. Today, I am speaking on behalf of the Institute's members which serve 77% of all 89.5 million ultimate customers served by the electric utility industry.

On behalf of EEI and its member companies, I appreciate the opportunity of presenting the electric utility industry view on the DOE conservation programs and to provide some insight into what EEI companies, particularly my own, are doing in the conservation arena.

The necessity of conservation is well established. Some view conservation as an energy source; some have declared it the moral equivalent to war; and many organizations have committed themselves to its cause.

But what is conservation?

- Customers view conservation as a way to alleviate the increased cost of energy.

- Utilities view conservation as a way of saving fuel and capital expenditures. Perhaps, more importantly, conservation should strive to improve economic efficiency, although more correctly stated, economic efficiency should fuel conservation because the driving force for conservation is economics.

For "energy conservation" to be truly effective, both of the previously stated objectives have to be fulfilled. When the electric utility saves, the customer will save, and it is therefore in the customer's best interest that the utility save energy in a cost-effective manner. For example, let's look at a typical customer and the way he can conserve.

First - A customer decides "I won't turn on my air conditioner until I can't stand it anymore!" This may be a common response from customers, particularly as the cost of energy continues to rise. There are, of course, different levels of tolerance among customers as to when the degree of discomfort overrides the perceived value of the savings.

Depending of course on the particular electric system, the first effect certainly will be a savings in fuel. For some utilities this fuel will be oil. But what effect does this response have on the utility's load shape? In many cases, this will cause a system spike which results in little or no capacity savings. The end result is the least desirable type of conservation from both the utility's and customer's viewpoints, i.e., the utility doesn't save on capacity and the customer is uncomfortable for much of the summer and the utility still has to file for additional rate increases.

The second type of energy conservation category involves measures such as customer action to upgrade the thermal treatment of his or her home, or the use of more efficient equipment (air conditioning, heat pump, or other electric appliances) or through the use of thermal storage.

The thermal storage approach to energy conservation involves a deliberate attempt to improve load shape. Depending upon the utility, thermal storage may save fuel or change the mix of fuels consumed. If this methodology achieves widespread use it may become the best method of energy conservation from a utility viewpoint. Even though, with thermal storage, there are losses associated with the storage, these losses may be made up for by using more efficient offpeak generation. In any event increased insulation, highly efficient appliances or thermal storage achieve the double benefit of saving customers money and improving utility load factors.

Because of the unique load characteristics of each company, conservation programs are much more cost-effective when these characteristics are taken into account. The RCS program is a national concept that ignores the individual company charateristics. And which, we believe, will prove to be very costly to utilities and their customers.

The cost of the RCS program (some $4.9 billion dollars, according to DOE) does not justify the incremental energy savings that will result from the program. The electric utilities are already involved in programs that are locally cost justified, and that meet a majority of the goals of RCS. Therefore, any savings attributable to RCS are actually only the difference in savings (if any) between RCS and existing or planned utility programs. To comply with the Federal RCS program, utilities will have to stop or reduce the activities of these existing programs that are a benefit to the end use and the company itself. The RCS program is only one approach to energy conservation and is probably not the best approach for many utilities and their customers.

I can give you some concrete data on what the expected customer response to RCS based on the experience in New York State, which has had an RCS-like program in effect since June of 1978. This program was passed into law despite a 1977 statistically reliable study financed by the Federal and state governments and New York State utilities which concluded that as of January, 1977, over three million dwellings in the state had some attic insulation, over 60% had some wall insulation, and about 80% had storm protection on all windows and doors. Thirty percent of those homes had received some additional insulation between 1974 and late 1976, and the owners of an additional 30% planned to add additional insulation in 1978.

The utilities have implemented excellent programs in compliance with the New York State law and those customers who avail themselves of the Class A audit get a good value for the $10.00 fee they pay. The balance of the $79.00 to $95.00 cost of the audit is picked up by the body of the rate payers.

However, from June 15, 1978 to September 30, 1980, out of the 3.5 million eligible households in New York State, only 58,089 or 1.6% have availed themselves of a Class A audit. The overall cost of the program to the rate payers of New York State has been $7.8 million, of which only $411,000 or 5% has been recovered through audit fees.

If we include the 250,000 consumers who asked for Class C audits, which are nothing more than a do-it-yourself audit booklet, the program can be said to have reached 9.0% of the eligible households.

Now to those critics who would say the utility industry has not tried hard enough, I would cite the results of the program of the New York State Power Authority in the territory of certain municipal utilities who had done little to promote conservation previously. They gave the audits away free and report spending over $3.00 per customer served to market the audits. Their results show that only 16 1/2% of the customers took advantage of the free audits and that 37% of those audited indicated they had already implemented conservation measures before the auditor came.

The RCS Survey

EEI has conducted a survey in which the responding companies serve over 80% of all investor-owned utilities' eligible residential customers. According to the results of this survey the response to the RCS program will only be approximately 3%. Because of this, we question the wisdom of the Federal government imposing a program on the American consumer under which the vast majority of rate payers, who initiate and pay for their own conservation measures, will subsidize 95% of the cost of the audit service for those few consumers who will avail themselves of this all but free ride under RCS. In addition to the expected response, some points of interest obtained from our survey are:

1. Only 12 companies have expressed interest in financing conservation measures.
2. Only 4 companies are installing any conservation measure under the RCS program all the rest will be contracted to outside contractors.
3. Investor-owned utilities will spend in excess of $24 million just for outside contractors in the first year. (Computer time, training, etc.)
4. Investor-owned electric utilities will spend $142 million just in announcements for the first year.
5. The cost of an individual audit is over $120. This is in contrast to DOE's analysis that states a cost of $62.50/audit.
6. Post audit inspections will add at least $70 million over 5 years to the cost of the program for our members.

As a summary, it appears that DOE's overall cost estimation is not far off, if they assumed a 3% response, not 7%. To handle a 7% response as projected by DOE, the cost would probably double the $4.9 billion.

CACS and BEPS

Changing gears for a few moments, the cost justification of the Commercial and Apartment Conservation Service (CACS) program likewise is suspicious. DOE's own research has "indicated that similar (non-Federal) utility programs have achieved the significant participation and energy savings projected for the Proposed Rule (CACS) case without mandatory goals" (46 Fed Reg 4500). This suggests to me that once again the program's cost to the private sector will not justify the benefit, especially since the private sector's involvement will accelerate with the recent decontrol of oil prices and gas deregulation.

In addition, the Energy Performance Standards for New Buildings (BEPS) as originally proposed, is a classic example of a program whose goal has already been satisfied by the private sector and local government. Forty-seven states have energy conservation codes and standards in effect and working. DOE on the other hand to date has spent $50 million on a program that is yet to be implemented. The proposed rule published in November of 1979 received so much criticism that Congress saw fit to direct DOE to postpone promulgation of a final rule for two years. It seems logical that the best solution would be a statutory repeal of the BEPS program.

A much better approach is to allow the free market economy to determine the amount and type of energy conservation we need. The Energy Information Administration in their annual report to Congress, concur stating "that energy conservation - not government regulation!" (U.S. Department of Energy, Notice of Public Hearings and Staff Working Paper, March, 1981, DOE/PE-0022).

The free market approach assumes that consumers will act in their own self-interest, if given the economic incentive and the information on how to accomplish the task. From a utility standpoint, the free market dictates that some energy conservation alternatives are more valuable than others. As previously stated, the value to the utility will depend upon two criteria. First, what effect the conservation will have on the fuel that the utility is using to generate electricity. Often the savings will result in a reduction in oil use, if the conservation alternativse reduce the need for an oil generated peaking unit.

Second, what effect will the conservation alternative have on electric system plant requirements such as generation transmission, distribution and load curve?

The economics to a utility of a brand of energy conservation depends on the effect of that particular brand of energy conservation on each of the two types of savings. From an overall utility viewpoint, the best conservation option saves in both categories followed by those that reduce capacity (plant) requirements.

What are the utilities doing?

As energy costs have escalated, the public has demanded that electric utilities involve themselves with energy conservation. Accordingly, electric utilities have organized energy conservation programs with the purpose of reducing the use of critical fuels, minimizing the need for costly new generating facilities and helping homeowners manage the size of their energy bills. As an example, more than 170 electric utilities are participating in the National Energy Watch organized by EEI. Energy conservation is not a new topic for electric utilities. For more than 20 years, electric utilities have successfully lobbied builders to surpass the HUD minimum property standards for insulation requirements. Electric utilities have also provided homeowners with energy conservation pamphlets covering such topics as wise use of appliances and energy referral services. They have sponsored energy use seminars, panel discussions, advertisements, all with the theme, energy conservation. Examples of what utilities are doing are published in a study by EPRI with initial results of 80 utility thermal storage projects and 93 load control ongoing at this time.

What are some of the programs utilities are involved in today?

Long before "conservation" became a buzzword, the Long Island Lighting Company (LILCO) was telling the people of the community it serves that the efficient use of energy makes good sense. The rising cost of all energy forms has probably been more effective than our many programs in convincing the consumer that an investment in conservation not only saves limited resources of oil and natural gas, but also saves money. The results of price elasticity and the combined conservation efforts of our customer, our company, and other private sector companies and governmental agencies have been dramatic.

For example, in LILCO's service territory, dramatic reductions have taken place in residential space heating energy usage in the past ten years. In 1970 our average electric space heating customer used 21,327 kilowatt hours. By 1980 the annual average use had dropped 5519 kWh or 26% to 15,818 kWh!

Statistics of the local oil heating association show that over the same ten years oil heating customers on Long Island reduced their usage 17.3% from 1500 gallons to 1150 gallons per year! In 1970, LILCO's average residential gas space heating customer had an annual use of 188.6 MCF of gas. By 1980 this annual usage had dropped to 157.6 MCF of gas. This is a reduction of 31.0 MCF per customer or 16.4 percent! Because Long Island is primarily an oil heating area, we served only an average of 137,400 gas space heating customers over this span of time. However, we were able to serve almost 24,000 additional space heating customers from this conservation of gas. And these new gas customers formerly heated their homes with oil.

We are now taking a major step forward in serving the new markets created by consumer awareness of conservation. A new company, called LILCO Energy Systems, Inc. is being formed. The new company, a wholly-owned susidiary of the Long Island Lighting Company, will market energy efficient, fuel conserving equipment. The subsidiary is planned as a non-regulated corporation which will operate in the marketplace in competition with any others who wish to offer similar services. Consumers who deal with LILCO Energy Systems can have confidence in the product line, not only because of the service reputation of the parent company, but also because high quality equipment, properly installed, and properly serviced, will be the hallmark of the new company. Installation work will be subcontracted to experienced contractors with good reputations for quality workmanship and good service.

Initially, the new company will have two product lines - high efficiency gas heating equipment and solar water heating systems. But these two product lines are only the beginning. We expect to expand into solar space heating, solar systems for business use, and certain types of electric heat pumps. We are also looking to a future with electric vehicles and photovoltaic cells for the direct conversion of sunlight into electricity, just as soon as technological advancement makes these devices commercially practical.

Our studies have shown that there has been very little marketing on Long Island of high efficiency gas heating equipment which consumers can buy to replace aging heating systems. These new systems cannot only save money for the customer who buys them, but can also provide another benefit. The gas they save can be made available to their consumers who wish to heat their homes with gas. LILCO has extensive experience with gas heating equipment, so this seemed like one of the best areas in which to begin the new business. Experienced LILCO employees will form the core of the new company.

Another line in which the company has considerable expertise is solar water heating equipment. Our initial solar water heating demonstration program, that began in October, 1978, involved over 650 homeowners. The results of the program have shown that the combination of solar energy and a backup electric system that uses electricity at off-peak periods can halve energy consumption and water heating fuel bills. In addition, the greater use of electricity generated at off-peak periods financially benefits all LILCO customers.

No doubt you are wondering what if any effect this new subsidiary will have on our ratepayers. I've already mentioned that its success will free up additional gas supply for those who need it for home heating and that the increased use of our electric facilities at offpeak periods will help to moderate electric rates. However, the costs and revenues of LILCO Energy Systems will be entirely separate from those of Long Island Lighting, and will, in themselves, have no direct effect on rates.

The money to capitalize this new business will come from our shareowners. Although the investment is not large, in return for taking the risk in this venture, the shareowners will rightfully expect to earn a return. Because ratepayer money is not involved, this subsidiary will not be regulated by the Public Service Commission. This is a distinct advantage in that the organization will be able to respond rapidly to changing conditions without the time lag that inevitably occurs under regulation. The subsidiary will also be able to make its own decisions on the types of equipment to market and how to best market it. The future of LILCO Energy Systems will be determined solely by what the consumer needs and wants, and how how well it serves those needs. Free market economics in effect.

We believe that endeavors such as this which utilize the vast technical and marketing resources of the utility industry are the best way to promote energy conservation among this nation's gas and electric users without placing non-effective cost burdens upon the already escalating rates.

Another example is Oklahoma Gas and Electric. In the summer of 1980, Oklahoma Gas and Electric began a test to measure the reduction in peak demand when ceiling insulation is added to typical residential homes with central air conditioning. The company had six additional inches of attic insulation installed in each home in the spring of 1980, in preparation for the experiment. Test results indicated an 11% drop in summertime peak demand and a 10% reduction in kilowatt hour consumption. All this was done without the constraints associated with the RCS program.

In addition, OG&E has a "Peaks" program which is aimed at reducing the peak demand. The reduction is to be achieved by incorporating radio-controlled devices to cycle off air-conditioners for brief periods of time or through the use of temperature sensitive devices that cycle air-conditioners. The "Peaks" program is projected to reduce demand requirements by 50 MW.

Oklahoma Gas and Electric's major load management program has been titled "Residential Load Mangement." This is a program that will help control the demand of a residence through:

1. Insulation
2. Air conditioning system replacement
3. Reduction in A/C requirements

This program is estimated to save 275 MW over the next 5 years.

Three major conservation programs that Arizona Public Service Company has in effect at this time are:

1. APS is using the "INTERCOM" system in their residential weatherization program. This system is a computerized energy audit program enabling in-depth analysis of structures. The program requires R-30 in the ceiling and R-11 in the walls, "hot tap" water heat recovery and the use of high E.E.R. air conditioning. APS has published and distributed an "Energy Consumers Guide" which displays various energy profiles and costs and equipment information. This audit is designed specifically for APS customers and does not include many non-cost effective components of the RCS program.

2. APS is participating in the DOE/Booz, Allen electric vehicle program and has taken delivery of 20 Jet pickup trucks and seven sedans. They are planning on using this fleet for meter reading and other duties around Phoenix.

3. APS has introduced an on-site computerized energy audit system for commercial and small industrial (less than 100 kW) customers. The program includes 13 opportunity areas for analysis and provides a print-out of

the solutions. The system is a comppletely independent system and can be programmed in the field for special applications.

Iowa Electric is in the process of conducting four energy conservation programs:

1. A pilot program using 24 electric thermal storage furnaces to determine the operating characteristics, the electric system effects and possible customer savings.

2. Iowa Electric is beginning the construction of a service center in 1981 and plans to install demonstration units which will include, but not be limited to, solar; electric thermal storage; solar assisted heat pump; and infrared heat, both gas and electric. This will benefit other design communities in Iowa that are investigating similar complexes.

3. A pilot program of add-on heat pumps operating in conjunction with oil or propane furnaces to be implemented this year. The purpose is to determine customer savings and electric system effect.

4. A program to purchase approximately six electric vehicles in 1981 for the utility fleet in Cedar Rapids,

   Iowa. The purpose of this project is to determine operating characteristics, climactic problems and the electric system effect.

Public Service Electric and Gas of New Jersey has a solar water heating program that is aimed at creating an environment whereby customers of the company can obtain a sound engineered and cost-effective solar installation. Two standard installations will be available in six zones of the PSE&G Service Area: one with an electric back-up, the other using a "two tank" system using existing gas water heaters as back-up.

The contractors selected will be given hands-on training to insure that their knowledge of the specific systems and installation techniques meet the company's standards.

The utility will provide a warranty and service for a five-year period. In the "two tank" installation, the warranty will not cover the existing gas-fired water heater.

In March of 1980, PG&E came forward with an innovative proposal to offer zero interest financing to customers who install certain cost-effective conservation measures. In

PG&E's proposal, repayment of the principal amount financed would be made upon sale of the property.

The Weatherization ZIP program is just one example of PG&E's expanded program plans for the next three years. The company's customer-related conservation program plans for 1981, 1982 and 1983 include:

1. The Homes, Appliances, and Systems Program - which focuses on more energy efficient designs and features in new construction and promotes the sale and use of energy-efficient appliances. The program also encourages efficiency in lighting, heating, ventilation and air conditioning systems;

2. The Community and Consumer Services Program - which assists cities, counties, municipalities and other government entities, with their conservation efforts and provides conservation assistance to low income and disadvantaged customers;

3. The Commercial-Industrial Agricultural Services (C-I-A) Program which provides services, incentives, information and instruction to C-I-A customers through comprehensive audit, energy management and support programs; and,

4. Program Evaluation Activities - which center around measuring the impacts of PG&E's conservation programs on the need for energy resources.

In addition to the other customer-related programs mentioned above, PG&E has seven other conservation programs, including:

1. The Conservation Research Development and Demonstration Program which examines the latest in conservation concepts and technologies;

2. The Load Management and Load Management Research and Development Program - which encourages off peak usage by all PG&E customers;

3. The Cogeneration and Solid Wastes Program - which is designed to encourage the development of cogeneration plants and the use of solid waste and biomass as fuels;

4. The Conservation Voltage Regulation Program - which saves energy by reducing the annual average service voltage delivered to PG&E customers;

5. The Energy from Biomass Program - which currently involves the production of gas from landfill projects and agricultural waste products;

6. The PG&E Facilities Program - which reflects the efforts made by various departments within PG&E related to reducing energy usage; and,

7. The Street Lighting Conversion Program which will convert approximately 250,000 street lights in PG&E's service territory to high pressure sodium vapor lamps.

Texas Utilities has one of the newest and most innovative programs that I know of, entitled "Buy Back Capacity", Mr. Carroll Benson will discuss this in detail later in the hearing. Because of time constraints, I have discussed just a few utility programs in detail. These are not that unique, I could have used Georgia Power, Potomac Electric Power, Southern California Edison, Alabama, Iowa Power or any of the other companies participating in the NEW program. All these programs are functioning without the RCS constraints. These programs are some highlights of the residential programs on-going, EEI also has documentation on similar programs in the commercial industrial sector for any interested parties.

Results of existing free market response to the oil price increase of 1973:

a. Effects on load and energy use

1. Growth of electricity consumption since 1973 has dropped to 1/2 of the growth of electricity consumption prior to the 1973 oil embargo.

2. Capacity growth also went from 6% per year expected to 3% actual since 1973.

3. Electricity use for non-weather related uses in households has decreased since 1973 by approximately 25%.

4. In LILCO service area, average residential electric consumption for non-space conditioning uses in the year following the Arab oil embargo dropped 9% and in 1980 the electric use is still 6.5% less than it was in 1973.

Conclusion

In conclusion, the Edison Electric Institute is in complete agreement with the present Admininistration's attitude towards conservation, stated in the President's Economic Recovery Program Budget Reduction of Energy Conservation Programs of February 18, and I quote, "Motivated by rising energy costs and substantial Federal tax credits, individuals, businesses and other institutions are undertaking major conservation efforts." Evidence of these conservation efforts is clear ... "Some Federal conservation programs are, therefore, no longer necessary, while others may impede private initiatives by imposing too great a regulatory burden on the public." However, until changes in funding or the statute are completed, RCS and the CACS program will continue and the electric utilities will have to live with the programs. Private firms, especially electric utilities, have assumed the responsibility of providing energy conservation programs to the public. The results of conservation are significant, yet no Federal program is universally adopted at this time.

From a purely practical point of view, many utilities have no choice but to pursue load and energy management initiatives. Contrary to what some believe, the demand for electricity continues to grow, albeit at lower rates. Yet high interest rates, regulatory burdens and capital market constraints coupled with other factors make it difficult (and in some cases, impossible) for utilities to continue building generation plants at a price customers are willing to pay. As a result, utilities in this situation have no choice but to attempt to slow load growth and reduce or obviate the need for new generation capacity. There is evidence to support the proposition that energy and load management techniques can free up capacity for other customers, at a price less than what those customers would otherwise pay.

The electric utility industry has been involved in cost-effective conservation. It would be an injustice if these programs are shelved just to fulfill the requirements of a Federal program that is cost intensive and benefits such a small number of individuals.

I would close by echoing Mr. Benson's comments on the role of government in a future partnership with the private industry. Thank you.

DR. RIEGEL: Thank you very much. I would like now to throw it open to questions and discussion on these three very important and useful contributions that have been made.

MR. ONDICH: I have a question for Mr. Benson. In the two months since the YES program has been implemented, how many of your customers have taken advantage of it? secondly, a lot of the programs you talked about had to do with, what I would consider, middle income programs. Does your company offer any specifc assistance to low income families, audits, or whatever.

MR. BENSON: In the first two months since the program began, we've had approximately 1200 participants, and we have not yet done any advertising on our own. Utilities have normal billing cycles that they run through, and in the summertime, our billing inserts are typically directed toward air conditioning and how to control the size of your utility bill, and we have to run through a pre-planned cycle before we can insert advertising and other items.

So this month our YES program bill insert is running. The 1200 that have taken advantage of the program thus far have been by word of mouth or by dealer advertisement.

Programs for low income include this program. 95 percent of the housing stock in Dallas, Texas has some form of air conditioning, and this program is applicable to window units as well as to central air conditioning systems. In the brochures in back of the testimony package, there are outlined what the company does in the form of an incentive for a customer who replaces a central unit. So since 95 percent of the housing stock is air conditioned with one or more window units or central air conditioning, this program is just as applicable and perhaps even more advantageous to the low-income folks, because it helps them to buy an efficient piece of equipment at a reduced price, which will also lower their cooling costs from now on.

Other programs that we have for low-income folks include a program we're very proud of called Dallas Con*Serve. It was a part of the package that the President recognized in January. It's not mentioned in the testimony.

It's a pyramid type organization where we go to civic clubs and principally to churches, and provide education to a core group of people within these organizations who, in turn, have made a commitment not only to weatherize their own home, but to go out and weatherize five homes of people who are either unable or financially not in a position to do that for themselves.

This program has been extremely successful. We anticipate the weatherization of 50,000 low-income homes in Dallas during 1981 through this program. We have any number of other low income programs - referral programs in operation. We have a program we call Special Friend, where a customer who is in danger of interruption of service for non-payment of his bill can automatically include a third party notification provision so that when the possibility of service disruption for non-payment comes up, a third and responsible party can automatically be notified. This would be particularly useful for elderly folks who tend to misplace their bills and problems like that.

They can notify a brother, sister, daughter, even an agency who might be in a position to provide some assistance.

MR. RUSSELL: Could I comment on the low income situation? I'd like you to know that our division in EEI this year held a three-day dialogue with consumer organizations on the question of assistance to low-income people with regard to their utility bills. We had representatives from many national organizations, to governmental organizations, Health and Human Services, DOE, we had the National Council of Churches, the National Urban League, NAACP, American Association of Retired People.

We had a couple of consumer lawyers, and the list went on, a number of utilities. We spent two and a half days just exploring this whole issue, and I see that we have two basic problems. One of the problems is, do you help these people pay their bills today, with grants, such as the heat program, or do you weatherize. Or how do you put those two things together. I think we came to the conclusion that in the short range, you're not going to solve the weatherization problem overnight.

It's very complex, and it's very different from the problems that relate to the average homeowner. You're absolutely correct that these programs appeal to and can be picked up by the middle income type of person who owns his own home, and some of the upper middle income people today who are feeling the effects of the price question now, such as the question of affordability any more.

I think there's a danger if you try to tie the two programs together, you know, there is some indication of that. On the weatherization side, in suburban utilities, and, of course, you can't generalize too much, but I know from my experience that much of the low-income housing stock is rental, single family, all dilapidated type of housing, and we have found that there's little incentive to the owner, because the low income family pays the bill.

Very often, they're paying it with government money through various programs, either Social Services or things like the grant program, and that the local welfare and Social Service authorities don't want to push the landlords too much, because they're afaid of that housing stock for these low-income people drying up.

Now, in order to demonstrate what this problem is, I mean anybody can take and do calculations and show what can be saved, but I think there are unique problems here. So out of that dialogue, the utilities have agreed to undertake a little demonstration program which is under development right now in which we will get at least 10 homes in each of the 50 states that are basically low income rental units where the people are subsisting through government funds, and we will upgrade those homes, and we'll make case studies out of them. Out of the case studies, we'll be able to, I think, define, within about a year, what the unique problems are.

This isn't a question of saying an uninsulated house needs six inches of insulation. We think it goes further than that, and that the current programs are not reaching this group of people. Now, come of the things that we hear being done at other places also add to that, but I think it's a two-pronged problem, and it needs a lot of addressing. I don't think RCS is going to reach it, even if you give the audits away.

MR. ONDICH: Are you just starting that program?

MR. RUSSELL: In the 50 states, that program is just being started, yes. It just came out of a dialogue which we had in the beginning of April, and it's given to one of the committees in EEI which is developing it now. Some of the companies are already looking for the homes.

It will take about a year, a year and a half. One of the criteria is going to be that we have to be able to know what the heating and utility bills were in those homes in the year prior to starting under the old system.

MR. FRANKEL: Could I follow up on that? Do you see anything wrong with the utilities actually assuming the responsibilities that are now carried out by the weatherization program, and going into poor people's homes, weatherizing them, and then putting the cost of that weatherization into the consumers' rates so that the consumer sees the same bill but --

MR. RUSSELL: I can give you a general answer, and that is, I think that any such program should have to be shown to have a cost avoidance effect within the territory of the utility involved. I don't think that you should expect the whole base of rate payers to pay, you know, to go in and weatherize the house of a landlord who won't do it on his own.

MR. FRANKEL: I wasn't talking about subsidy. I was talking about direct payment out of the utility bill of the cost of weatherization. Often, it's the renter who sees the utility bill so he'll see nothing different, the same utility bill, only half of it will go to fuel and half of it will go to --

MR. RUSSELL: As I say, the utility should be able to show a cost avoidance. It shouldn't cost other rate payers.

MR. FRANKEL: But you have no resistance to doing that kind of a program?

MR. RUSSELL: I'd have to look at the program, and I think it has to have those basic parameters.

MR. DAVIA: I'd like to make a couple of comments on that. We have worked with a lot of low-income types of housing and some low income programs. The problem I see is the weatherization people do not address heating equipment adequately, and it's a recurring problem, because in many of the homes we're looking at where the energy use is three to four times more per square foot for that type of house than it is for the middle class house, you've got maintenance problems which would be solved mainly by changing a furnace filter.

The other thing is that a lot of these weatherization programs are addressing specific items like broken windows. Broken windows are the biggest cause of infiltration problems nationally and a lot of times they're not addressed. They throw the insulation in the attic, put on windows, they're putting vent dampers on furnaces that are in crawl spaces. It's really idiotic, but that's happening out there. So it's maintenance, and it's ongoing, and that's the biggest problem with some of the weatherization.

MR. RUSSELL: I can give you an example. In our own territory of looking for homes to fulfill the 10 houses we're going to do, we can upon a house in which the landlord had replaced the oil burner with a brand new, modern, efficient oil burner, hadn't weatherized the house efficiently. The customer wasn't able to pay the oil bill. So they had an empty oil tank, and they had spent the whole winter heating the house with plug-in electric heaters, and insufficiently weatherized house.

So you see, what I'm saying to you is that there are unique problems here. It's not just go in and do nice things and resolve the problem. You take this low income house, you spend money, a rental house, and you upgrade it, and maybe the landlord decides now he doesn't want that low income family in there, and he boots them out, and they go off someplace else, and he rents it to a higher income person.

You can't broad brush that problem.

MR. BENSON: Real quickly, I think there's a more generic question here, and that is whether there is a role for the federal government in determining whether or not utilities should or should not run a specific kind of a program in their service territory, and I think the thrust of, at least my understanding of, the direction government would like to move is away from that kind of a program.

The program being discussed is outside the bounds of virtually anything that's been proposed or thought of seriously. The free market will create plenty of opportunities, and if it's in the best interest of the ratepayers in a particular service area, that program will go, and if it's not in their best interest, the program won't go, and it should not go because of some government fiat.

MR. RUSSELL: I'll give you a good example. Mr. Benson's program is an excellent one demonstrating a cost avoidance feature. If I come to my company right now, and some would look at a program like that, governmental people typically have looked at a program like that and say everybody should have that program.

When you come to my company, we are going to build generation for oil back-out, okay, and we're not going to have a capacity problem for the balance of this century as we can see it. So we wouldn't want to turn around and spend money in that way in our territory. I'm not being critical of his program. For his purposes, that'll be great, but to spend money because there won't be a cost avoidance, because we're going to have to build capacity anyway, we have to direct our efforts in a different way, and I think that's the point we're trying to make here.

DR. RIEGEL: I'd like to make a point and also ask Mr. Benson about the YES program. This is one of the clearest examples that I have seen of a company taking a position and clearly articulating to the public its view of what I will call the even-handedness of investment in production versus investment in conservation. If I understand the program clearly, you are indeed putting the utility's money where its mouth is, in investing through rebates that are redeemable for electric energy purposes for a number of conservation investment.

I think for many utility service areas that is entirely appropriate, because as you rightly point out, the avoided costs or deferred costs of major capital investment has a value not only to the customer but to the utility, provided the utility is adequately rewarded for that kind of investment.

I have two basic questions. One is whether you have come to any conclusions about how activities of the Department of Energy or the Federal government could help to foster that kind of evenhanded investment by other utilities where it is appropriate around the country. Secondly, could you give us a tangible update on how the program is going.

Are you finding that indeed the YES shares are being snapped up with enthusiasm in your service area? Do you see in the future anything like a parity in investment, the stream of investment dollars going into the conservation option versus the new central facility option?

MR. BENSON: Well, with respect to your first question, I see the role that government might play, as I mentioned in the testimony earlier, as an information gatherer of this kind of program and a disseminate of this kind of program, and as a facilitator in terms of helping to remove any barriers that might exist to the operation of programs like this.

Until the Energy Security Act was passed last summer, there was some question whether a program such as this could have been offered, and by government fiat, utilities were prohibited from becoming involved in the installation and financing business. Congress wisely changed the requirements of NECPA by the Energy Security Act and removed that prohibition, and these are the kinds of roles that I see government playing - now that the free economy needs to operate as a free economy - and government's proper role is to work with the free economy to help remove any barriers that might exist, and not to advocate any particular scenario. Report that this is what's happening this is what apparently has worked. Government should suggest that companies as entrepreneurs who have shareholders who demand a return on their investment ought to see whether or not this program might be applicable in their area as well.

The second question was, what's been the response to YES. We've had 1200 customers receive YES incentives in two months. We initially designed the program and set the incentive level at a point that we thought would get between 40 and 50 percent of the market. We're talking about 40 to 50 percent of the air conditioners which fail would be replaced by high efficiency equipment, 40 to 50 percent of all the new equipment that's purchased and installed on our lines would be high efficiency equipment and the same in new construction.

Our expectations range on the order of 60 to 75 percent as a result of the program over a five-year period. It's been fantastically successful. Obviously with a limited staff and dollars to devote to the program, there's only so much that our folks can do. So we have to depend on the dealers and distributors to carry the ball to the public, and they've done that in a terribly unique and aggressive fashion.

We see ads running in the newspaper where one dealer will say, go out and make your best deal, bring the deal to me on paper, and I'll beat it by $5 and I'll install your unit for free. People are actually comparison shopping for efficiency, and there's a two-stage level in the incentive payment; if you buy a unit between 8 and 10 1/2 EER, you get one kind of an incentive. If you buy 10 1/2 or above, you get a much larger incentive.

So the customer now has a reason for looking at the tag that's on the equipment that says what the EER is. Up till now, there's been no justification really for looking at that. He has attached a monetary significance to that tag, and we think the program is going to be really phenomenal.

It is only the beginning. The program is applicable to all residential structures, multi-family and otherwise, It covers 95 percent of our customers since 95 percent of the housing stock has some form of air conditioning. The payment goes to the tenant or to the person who buys the unit. Many of the apartments, for instance, are unairconditioned and the tenants have purchased room air conditioners for air conditioning purposes.

Payment of the incentive is made only to those persons who pay a utility bill. No assignment of the incentive is permitted in existing housing (99+%) for this part of the program.

The second program is the lighting program which will virtually eliminate fluorescent tubes like those right over there. Instead of 40-watt fluorescent lamps, we'll go to a 33-watt fluorescent lamp, and as soon as the program is up and operational, within a year or so, those lamps won't be stocked any more, and we pick up 7 watts per lamp forever in terms of peak reduction as well as the customer getting the same lighting level for less money. We've got some other programs that will be coming over the next year, year and a half or so. You don't build Rome in a day. You must start brick by brick.

MR. FRANKEL: Let me follow up on that with a question. To transfer information about this program to other utilities that might be interested, is that a proper role for the Federal government or for the trade association, Edison Electric Institute, and does Edison Electric Institute have a program to inform other utilities of successful programs that have been carried out?

MR. BENSON: Certainly. To a great extent, the information gathering and information exchange activity is duplicative, but I would submit that the Institute deals solely with member companies, and the Federal government has a role not only in dealing with member companies in the association, but also the public at large, and particularly other governmental agencies.

MR. RUSSELL: Within the industry and the division of which I was chairman this past year, at an executive advisory committee level which hit 65 or 70 vice presidents which take the bulk of the customers in our industry and they meet regularly and exchange information, and below us, we have what are called subject area committees, and our subject area committees, some with 150-200 members representing all the utilities, the commercial area, the residential area, the major function of those committees is a day-to-day gathering and dissemination on programs of this type, and regular reports are disseminated.

MR. FRANKEL: I want to ask another question along those lines. There's a general philosophical agreement with the thrust of the President's program that often obscures the actual details of what is being done.

Now the government has several different tools it uses to motivate energy conservation. There's R&D, information programs, incentives and regulations, and I'd like to cover each of those.

For the R&D area, Mr. Davia, are you aware that there was a program in the Department of Energy which the man on my left knows something about, called the technology and consumer products program that was trying to develop very efficient burners and boilers, gas fired heat pumps which could have an efficiency of 150 percent, electric heat pumps which improved efficiency by 25 percent.

Do you think that that program, the technology and consumer products program, was an appropriate Federal program, and do you agree with the Administration's decision to terminate it?

MR. DAVIA: Well, I'm not fully aware of all the details of that program, but I do know that there is a common problem, and that is that we're trying to replace existing heating systems with more efficient ones and the market is not ready, because the thing I'm getting from heating contractors in our area is that they go out and try to sell an efficient unit that has a seasonable efficiency of greater than 85 percent, and the customer is not buying it.

It's $200 to $300 more, and they cannot understand that that's going to use that much more or less energy, and, therefore, I think any time we can generate interest in replacing air conditioners, electric heating, gas heating with more efficient, that's good. I do not know the details.

MR. FRANKEL: Do you think it's appropriate for the Federal government to do research and development to generate products that would improve energy efficiency?

MR. DAVIA: Yes, the government and private industry working together, Lenox, Hydro-Pulse, all those others. One thing I might add is that on heating equipment, what we see happening again with low-income people is that the existing heating equipment they have will not perform and will not supply enough heat to the structure, because of poor maintenance, poor design and just rundown equipment.

So what they try to do is supplement that heat with electric or with gas ranges. Last winter I went into many homes where the humidity level would be about 80 to 90 percent, because all four top burners and the oven were on in the home pumping all that into the house in a means to try to keep warm.

If weatherization or whatever had corrected the problem with the furnace, that wouldn't have happened, and the health and everything else wouldn't go downhill on those customers.

MR. RUSSELL: I'd like to make a comment on that if I could. I think that, for instance, now there's pretty good incentive for the manufacturers to get into efficiency R&D on the standard types of of equipment that are being used.

I find that sometimes there are inventors, entrepreneurs, manufacturers, who are hesitant in some cases in getting into governmental programs, because the inertia that gets involved with it, and I had a particular case in mind of oil burner that would save 15-20 percent that the inventors took to Sweden and Switzerland and put on the market in this country probably within a year, developed by a couple of NASA engineers in their time off. They didn't want to deal with a governmental program. But where I think there is a role for government is in the development of technologies where there's promise, but there is a definite short term market available.

I'm talking about photovoltaics, electric vehicles, that type of thing. The government, I think, can provide some longer range R&D money and efforts and things like that.

I don't necessarily see where the government has to get into having a manufacturer improving the efficiency of his gas burner. So let's see something newer than that. The incentive is there.

The reason my company is going into doing that is, as Mr. Davia pointed out before, too many people are spending money maintaining equipment which can never get up to a seasonal efficiency of more than 40 or 50 percent when they ought to be spending money in replacing that equipment.

Now there is enough equipment there that's already good, and we're going to sell that to our customers and they're going to benefit by a 15 to 30 percent savings in gas and money and we're going to benefit because we're going to recover that gas and sell it to other customers and backout oil.

MR. FRANKEL: Mr. Davia, if people aren't making these cost-effective decisions to purchase new energy efficient equipment like gas furnaces that we talked about, do you feel that there's a need for a greater Federal incentive, or should the utilities have some sort of a program to help meet the upfront financing costs of these, or should we just wait until the market takes care of the problem itself?

MR. DAVIA: Well, I think that waiting for the market to take care of itself is going to be the longest scenario. We see furnaces that are 30 percent efficient that will never wear out.

They can take a direct hit because they were so overbuilt initially and, you know, they'll still continue to perk away in that basement.

The problem is that there's no incentive right now federally or state for replacement furnaces. There are replacement burners for oil furnaces, but a large percentage of the homes are heated with natural gas, and if the incentive for replacement -- all you have to do is write a tax credit that said, we will give an X percent tax credit for any furnace that is installed and is greater than 85 percent in seasonal efficiency.

That would be an incentive, and I think the private sector is ready, waiting in the wings with enough material and technology that it doesn't have to be developed, it's there, but the consuming public is not aware of it, and any time, you know, furnace contractors do not have a great credibility in the market a lot of times, because people make replacements that are unnecessary and things like that. So they go in with a credibility problem and a lot of times customers are very leery of them and will not let them explain that this is more efficient or we're going to save you money.

So that's the kind of trigger or hot button, I think, that's necessary to get this market going.

MR. RUSSELL: Those things are not being sold by the private contractors, and I think that you could refine the Federal government's role by again looking at them stimulating through tax credits the early adoption of some of these activities.

We started with our solar demonstration program, solar water heat demonstration program in 1978, October. We had a goal of putting in 650 units, and we sold them to customers, installed them. We restricted greatly the size of the family and the orientation of the house and so forth to get a homogenous sample.

At that time, we were calculating that when a customer converted from oil water heating or electric water heating, it was about a 15-year payback. We completed two years ahead of schedule on those 650 units. By the time we got through, we were calculating the payback to be about seven years each, and that's due to two specific factors, the first factor being backed out, the sharp increase, and the second, the federal tax credit. I think this has demonstrated to people in our area that solar water heating is viable, and I think that in order to get people to look at efficient equipment that the Federal government could have a role there too, and then when it becomes understood, you know, and the paybacks are really there without the credits, the government can start to phase the credit out, but they can bring the public awareness to bear out when you're trying to develop a new type of action on the part of the consumer.

DR. RIEGEL: Well, I hate to bring this discussion to a close, but we have another half-dozen witnesses or so this morning and I feel the press of time. I'd like to thank all three of you for appearing with us this morning.

We're going to take a very short break now and convene again at 10:30 sharp.

(Whereupon, a brief recess was called.)

DR. RIEGEL: We'd like to get started again. As in the past, we'd like you to summarize your statements to the extent possible, and we will turn as quickly as we can thereafter to the dialogue between the witnesses and panel.

Let's begin with Mr. Sheldon Cady from the Mineral Insulation Manufacturers' Association. Did I get that right?

MR. CADY: Close. Good morning, thank you. My name is Sheldon H. Cady. I am Executive Vice President of the Mineral Insulation Manufacturers' Association (MIMA), of Summit, New Jersey.

The membership of 48-year old MIMA consists of a majority of the manufacturers of mineral fiber insulations for buildings. This includes both rock wool and glass fiber products manufactured as batts, blankets, and loose wool. I am speaking on behalf of most, but not all, of MIMA's members.

As an Association, MIMA has been active for well over the past decade in educating the consumer, agencies of the Federal government and state legislatures regarding the measures necessary to achieve the goal of energy efficiency in our nation.

The efforts of the Reagan Administration to reduce the cost and other negative aspects of unnecessary government regulation are applauded by our industry.

The efforts to reduce Federal activities concerned with building construction could, however, do great harm if needed national guidelines and low cost programs were swept out along with those costs that are excessive or whose requirements are an unnecessary burden. This is particularly true of attempts to improve energy efficiency through proper building design and construction. "National" standards prepared with the homeowner's interests in mind are required to provide guidelines for reliable, cost-effective energy conservation measures.

Without these standards, the desired improvements in the thermal performance of buildings are unlikely to be accomplished.

We agree that higher energy costs provide an incentive to conserve energy and also that enforcement of thermal performance standards can be carried out at many local levels by building inspectors. Unfortunately, there are many areas of the country that are not covered by any energy conservation standards and poorly informed home buyers can unknowingly purchase improperly insulated homes resulting in excessive heating and cooling costs.

We cannot agree with the Administration's concept that "Free market forces establish acceptable performance" of current housing construction. It is obvious that this concept can result in unacceptably high costs of heating and cooling in some new homes. Builders and prospective homeowners are entitled to a reliable and unbiased Federal recommendation for minimum acceptable thermal performance levels.

The nation is already confused by too many guidelines and standards relating to thermal performance of houses. To eliminate the Federal standards and replace them with a multiplicity of local and state codes is not a satisfactory alternative. The vast majority of current standards (other than Federal) are based on ASHRAE Standard 90, which contains data now over seven years old and are totally inadequate when curent projected energy costs are considered. A three year lead time is normally required to effect changes in the Model Building Code. After this is accomplished the changes must be adopted by the states in a lengthy process. To eliminate Federal standards and replace them with a multiplicity of local and state codes is not a satisfactory alternative. The overall effect is to ignore the homeowner's plight in attemping to keep home operating costs below his mortgage payments.

Without a unified regulatory system, our industry faces tremendous problems if 50 different states enact 50 individual standards for thermal efficiency. Even though this is counter to the Administration's program of decentralization we feel that, in the interests of business efficiency, central rules and regulations are necessary. Fragmentation of 50 states involved in legislation would increase the cost of services both to our industry and to the consumer.

One example, which our industry has already experienced, will illustrate this point. In enacting thermal efficiency legislation, individual states have required information each considers appropriate to be printed on packages of insulation. While some of this information is standard to all, several neighboring states have required additional and different information to be added to the bag label. The products of one manufacturing plant may be shipped into as many as a dozen different states. Shipment of different bags to each state is economically unfeasible and realistically impracticable. Supplying all of the varied information required by all states on one package would result in an assembly of information that would be overwhelming and unreadable. In either case, the consumer loses. Similar expressions of individuality, multiplied by 50, are an appalling prospect for the industry to face.

We specifically recommend the following:

- DOE's R&D work on the residential portion of BEPS be expedited and completed so that the costly and voluminous technical effort (now largely accomplished) can be finalized into simplified guidelines for use by the builder and building code authorities.

- When the BEPS activity within DOE has produced the simplified thermal performance guidelines, these should be nationally publicized as the new recommended standards for acceptable energy efficient construction and be promoted for adoption by the states.

- HUD, FMHA and the VA should continue to enforce their present minimum thermal performance requirements for federally insured housing until the states are prepared to implement this responsibility with federally promulgated simplified BEPS guidelines for one and two-family residences.

- For other than federally insured housing, DOE should promote the use of the FmHA Thermal Performance Standards as the recommended minimums for new construction for the interim period.

EPA's charge from Congress "to carry out a continuing analysis of the adequacy of attention to energy conservation" leads us to a second issue. In our viewpoint, the consumer's attention to conservation has been inadequate.

Since the early seventies our industry has been calling attention to the need for public education and information programs on the benefits of retrofit actions to the building owner. The private sector alone cannot accomplish this although we have tried, and are trying. For instance:

The Committee for Home Energy Conservation (CHEC) was organized by leaders in industry, labor, government, consumer and civic groups in 1979 under the auspices of the National Institute of Building Sciences (NIBS). Its purpose was to build consumer awareness of the benefits of reducing energy waste in homes with a basic checklist of ten major steps, called the Big-Ten Checklist. As a result of an in-depth publicity campaign, it is estimated that roughly two-thirds of the families in the country have received copies of the Big-Ten Checklist through 1980. The CHEC Committee was reconstituted recently to consider other ways to get the message across.

We suggest that the government should take steps to heighten the awareness of the public for savings possible from conservation activities. There is a precedent for this. In World War II coal had to be conserved because of transportation problems and the government took steps to launch a vigorous campaign to encourage energy efficiency. A heat loss limitation was set by the War Production Board. The FHA extended its insurance terms to encourage insulation. The Office of War Information scheduled a fuel conservation drive on the radio and in the press and the private sector also actively participated in the program.

A cooperative effort by all concerned, led by the government, is as appropriate in the 1980's as it was in the 1940's.

We strongly urge everyone concerned with keeping energy use and home heating and cooling costs within reasonable bounds to support these recommendations and work to bring about legislated actions which will eliminate wasteful use of our natural resources. Thank you.

DR. RIEGEL: Thank you, Sheldon. I'd like now to move to Karen Anderson from the American Public Power Association.

MS. ANDERSON: Good morning. My name is Karen Anderson and I am the Energy Conservation Manager of the American Public Power Association. APPA is the national trade association for the nation's 2,200 local, publicly owned electric utilities.

APPA's perspective on the Department of Energy's "adequacy of attention to energy conservation methods" is somewhat unique, because we have members that are intimately affected by DOE programs like the Residential Conservation Service and many others that are not directly affected. The public power systems that we represent range in size from the town of Severance, Kansas with 52 electric meters, to the City of Los Angeles, with 1.1 million electric meters.

Only 45 public power systems are large enough to fall under the mandate of programs such as the Residential Conservation Service. Unfortunately, the experience of our members would indicate that a detailed, prescriptive and costly program like RCS is not worth the money and effort being lavished on it. The audit procedures are complex, overly-analytical, and time-consuming. The municipal electric utility of Knoxville, Tennessee, for example, has completed close to 20,000 audits a year. They plan to increase this to 64 audits a day by having 16 employees make four audits each. But, under RCS, the utility will need to send out eight teams of two auditors. Each team will be able to perform only two audits per day -- reducing the total number of audits from 64 to 16.

Even more distressingly, there is evidence that implementation of RCS has thwarted existing conservation programs that worked. One municipal utility, for example, employed commercial insulation salesmen as auditors. The crew was trained and carefully supervised by the utility. Customers were happy with the audit service and the end result -- the number of installations performed -- was far more successful than other utility audit programs. The practice was eliminated by RCS.

In another case, the Palo Alto, CA municipal utility developed its home insulation program using four local firms as subcontractors. The firms were selected under open and fair bidding processes and provided insulation services at a set rate. Two years into the program, the utility noted that insulation prices in surrounding metropolitan areas were almost twice as high as those provided to its customers under the utility program. This practice, too, was outlawed by RCS.

In a final instance, let me cite the conservation program of a municipal utility that is too small to come under RCS. This spring, voters in Burlington, Vermont approved a $2 million bond issue for conservation and load management. Half of the money will go to cover the cost of purchasing and installing a sophisticated load management system. The remaining $1 million will be spent directly on customer conservation -- on wholesale purchase and utility installation of shower flow restrictors, water heater jackets and outlet gaskets. While in the home, the utility representative will take other low-cost action, such as turning the water heater thermostat and showing the owner where caulking is needed.

The Burlington conservation program benefits everyone -- local suppliers, who sell more conservation devices to the city, the customers of the utlity, and the utility itself, which expects to save 2 to 9 million KWH/yr from the program. Burlington is fortunate in that it is a small community. Its cost-effective, simple conservation program would be illegal under RCS. Additionally, if the utility has decided to finance customer conservation measures, it would be precluded from doing so under provisions of the Windfall Profits Tax Act.

Federal impediments to utility conservation -- such as prohibitions on publicly-owned utility financing conservation measures using their regular method of raising capital -- tax-free municipal bonds, or prohibitions on utility conservation devices -- are major obstacles that should be eliminated. APPA's experience with federally-mandated utility conservation programs has been discouraging and is the basis for our recommendation that the forthcoming Commercial and Apartment Conservation Service Program (CACS), required under the Energy Security Act, be implemented on a voluntary basis. The reasoning is not to give utilities relief from assuming conservation responsibilities, but to assure development of a variety of approaches to commercial and apartment conservation. The results of all these experiences should be instructive in pointing the way to programs that work and that are cost-effective for consumers and the utility.

It is APPA's position that Federal conservation programs are useful and welcome where they support and enhance local initiatives, but that they are non-productive, and may actually result in less conservation when they consist of prescriptive, inflexible rules for the entire country.

What kinds of conservation programs can we expect from public power systems now that the Reagan Administration is de-emphasizing mandatory utility programs? We are noting an overall increase in the number of public power systems developing energy management programs. Not surprisingly, these programs are as varied as the communities served by the public power systems. Let me provide a few examples.

In Kissimmee, Florida (population: 16,000), the municipal utility is using monies from a gas supplier refund to provide customers with 20 percent rebates for installation of approved solar and conservation measures in their homes and commercial buildings. The improvements will save an estimated 90,000 kwh per year.

In Newport, Oregon, the local public power system has announced it will pay costs of installing insulation and other conservation in the homes of its electric heat customers if the cost of doing so is less than would be required to meet the utility's energy needs through construction of new generating capacity.

The Sacramento Municipal Utility District has a passive solar home program, where the main objective is to increase the use of passive solar design, thereby reducing the impact of new homes on the utility's air conditioning peak demand and annual energy use. To do this, SMUD provides free computer analysis of home designs submitted by local builders, which simulate the heating and cooling requirements of the proposed new residences. If the design requires at least 50 percent less energy annually to heat and cool than a typical home, then SMUD will provide marketing assistance. The program has already attracted the participation of some of the area's largest volume homebuilders and the utility plans to expand it soon to a larger range of housing types -- condominiums, cluster homes, and maybe apartments.

A close look at the kinds of energy management activities under way reveals that electric utilities are not just furnishing kilowatt hours anymore. They are helping cities set energy efficiency standards for new construction. They are in their customers' attics, installing insulation, or in the basement, helping to turn the customers' water heaters into pseudo-peaking plants. Utilities are bringing on staff solar specialists. One public power system looking toward a future fuel supply of waste wood chips even has a department forester as a full-time employee.

The umbrella term for all this new activity is "energy services planning" and it is the direct result of the new economics of electric power production. A decade of sharply higher costs is signalling utilities that they cannot consider themselves monopolies anymore. Increased costs are rendering utilities susceptible to competition -- and consumers are already investing in alternatives, from wood stoves to solar hot water heaters.

Energy services planning is a concept derived from the premise that the consumer is interested in certain energy services -- heat, lighting, operation of various appliances, -- rather than electricity per se. Basically, the energy services concept has four elements:

1. Emphasis on provision of consumer services (as opposed to simply selling electricity or some other form of energy).

2. A goal of meeting demand for a given level of service in the most cost-effective manner (including the possibility that the result will be a reduction in use of electric capacity and energy.

3. Planning ahead on a variety of alternatives stretching from end-use controls through consumer-utility cooperative energy endeavors to conventional power plant construction (with the objective of determining the least-cost answer for any planning period).

4. Utility investment or assistance in putting in place energy facilities which save consumers money (even though such aid may be outside traditional generation, transmission and distribution projects and may involve consumption rather than supply).

Energy services planning offers cities the chance to blend services economically, e.g. off-electric peak pumping for sewage disposal, introduction of a turbine-generator in connection with the local water supply reservoir, downtown heating and/or power production by incinerating garbage, cogeneration from a city hospital use of waste heat from generating facilities to distill alcohol to fuel city vehicles, tapping of methane gas at sanitary landfills and sewage disposal plants to burn under boilers.

The new economics of power supply is causing a revival of interest in decentralized power production in smaller units. Small scale hydro-electric installations are experiencing a renaissance ... municipal waste-to-energy programs are under way ... cogeneration arrangements are being worked out with local industries, and many more. In the future, it is not difficult to envision public power systems more involved in the business of installing, servicing and/or operating dispersed energy production equipment (such as photovoltaic arrays on customer roofs) as opposed to supplying electric power only from large central station power production plants.

APPA believes increasing numbers of public power systems will become involved in energy services planning because it will be in their best economic interest to do so. The Federal government can help by identifying and removing legal, technical or environmental barriers that stand in the way of coordinated energy activities. Further, the Federal government can help encourage communities toward energy services planning with educational materials, conferences, etc. that inform and bring together the various sectors who must be involved in such planning. The success of energy services planning may in the end rest on institutional questions: whether city planners will coordinate with the electric department, whether the water department will incorporate a new solar utility, etc. Only when all affected interests within a community are willing to work toward a common goal of energy security and controlled energy prices will the concept of energy services be turned to reality.

DR. RIEGEL: Thank you. The next presentation is from Robert Naismith who is President of the Potomac Energy Group.

MR. NAISMITH: Thank you. My name is Robert Naismith, and I'm President of the Potomac Energy Group. I'm a licensed professional engineer with 22 years of experience in energy systems. During the last seven years we have been primarily involved in building conservation issues. This work has included both volunteer work and for profit funded efforts.

Two years ago we founded Potomac Energy Group as a small for-profit business to fulfill what we perceived as a strong need for private sector energy services. We provide a wide spectrum of services for private clients, as well as state and Federal agencies.

Our primary focus is in working with what we call individual energy consuming decisionmakers, homeowners, home builders, building inspectors, heating contractors, building owners.

In our outreach program, we have done things such as develop a cost cutting clinic for homeowners which was probably one of the most successful programs under EPCA in that it reached over 50,000 people in the State of Virginia alone and was adopted, at least in part, by 19 other states.

In the last three months, I have personally conducted workshops for over 400 builders in two states and seminars for heating contractors and oil dealers in four cities. It is this direct experience with the needs and reactions of working level decision-makers in small business that I wish to share with you today.

My first impression is that the concept of the policy of using price as an incentive for energy conservation is working very well. The attendance at our meetings, the attentiveness of our audiences, and the response to our recommendations, both in our seminars and for our private clients, is clearly driven by the cost of energy and little else.

It is also clear that we're getting increasing attention in our private sector from energy prices, and this is true whether we're talking about individual homeowners or multi-family or small commercial buildings, all of which we do.

In this environment, we ask ourselves what do we see as the role for DOE in an environment where their resources are limited, and we see three things that are particularly important. We see a real need to fund basic research and evaluation efforts which would not otherwise be taken. This work is really critical to the practitioner in the field. The work must be focused in large part on buildings which are occupied by real people, and which are built by conventional construction practices.

Unless the work is directed towards this real world existing building stock, it's of limited use to the practitioner. Work, for example, like the Twin Rivers work in Princeton has been extremely helpful to the practitioner.

The work at Brookhaven on furnaces and that sort of thing has been very helpful. We see the need for evaluation of new techniques and equipment. So both the practitioner and the public has some sort of unbiased evaluation of the worth of new products as they come on the market.

If there is no independent evaluation, the consumers and practitioners together are left in sort of a wasteland or a thicket of unsupported manufacturers' claims, and that very significantly affects how much investment will be made and how much risk will be taken by people who are trying to respond to the price.

In particular, we see several areas that we think should be emphasized. The effects of retrofit options on the control and mechanical systems in single-family dwellings needs to be worked very carefully.

The Twin Rivers work is excellent on the shell of single-family dwellings. We would like to see more work in the mechanical and control systems, the shells. And the environmental effect, such as solar and the other parts of the environment for both single family and multi-family, we see as important.

We see little work being done at present on multi-family retrofit options, and their effectiveness, and we see that as an important area. Also, improved field evaluation techniques and analytical tools are very important. When we evaluate a building, the payback on an individual option may vary from three to seven years, depending on whether or not we missed the R value in a roof assembly by two or three.

In one case, the investment is going to be very attractive for the building owner and look like a great investment. In the other case, it's going to look like a very marginal investment at best. and so our analytical and examination tools need to be improved. The second critical need we see is for good focused localized energy information.

First off, it must be accurate, based on the research either of the Department of Energy or others, and in that instance, it's important that the information be timely. It's much more important to the practitioner to have information promptly even those where it's identified as preliminary than to have research quality information years downstream.

Our clients, the building owners, must make decisions. We need the data as quickly as possible. Secondly, the information must be on a localized or regionalized basis. When we talk to buildings about passive solar, the issues are enormously different whether we're talking to Houston or Boston.

When we did some work for the weatherization program, we found many excellent programs which would work in one locality or one region, but which would work disastrously in others. It's very difficult to write rules and regulations and be prescriptive on a national basis and get good effects every place.

In general, we find the text or information that's done on a national basis is either so general it's not to be useful, or so confusing with exceptions for locations and that sort of thing as to be confusing and not good information for the people to think it's important that the information that be supplied be localized, whether that means it is produced locally or whether it is produced centrally and localized in its outreach is a separate issue, but it has to be localized.

Thirdly, it's very important that the information be presented in the terms of the people to receive it. We very often see information on heating systems which is written in terms of the academic or the engineer rather than the trade practitioner who is really going to be the person who has to make the decisions about whether his company is going to try to market these devices and how they're going to be installed, so we see a need for very focused, very directed language.

The third need that we see, and it's sort of out of our area, but we see a critical need to provide for those who can't provide for themselves. Our clients, the people that we do work for, clearly are responding to price, and we think that's a healthy way to provide incentives for conservation. But we never see the people who can't afford to respond. Providing for them, it seems to me, is a legitimate form of government activity.

So, in summary, we feel that a greater emphasis on the market and price will result in substantial reductions in the amount of energy used in buildings, and a corresponding diminished load on our environment. We feel, however, that it's critical that the limited resources be carefully focused on research, information and assistance programs, as I've mentioned. Thank you.

DR. RIEGEL: Thank you. I'd now like to turn to the panel for questions and discussion. Ted Kapus?

MR. KAPUS: Thank you. I appreciate your calling on me first this time because I got cut off before. I have a question for Mr. Naismith, is it?

MR. NAISMITH: Yes.

MR. KAPUS: You had mentioned that the first area of interest that DOE should contine its involvement in is the basic research and evaluation which would not otherwise be undertaken. Now basic R&D can really be broken down into two areas, that which normally would not be undertaken for various reasons, and I agree with you there, but there's another area that's somewhat shaded.

Would you agree it would be a reasonable involvement for the Federal government on technologies that had to be accelerated into the marketplace?

I know the Department of Energy's research area and a number of its programs have been involved in helping to accelerate the introduction of this energy efficient technologies by three to five years. Do you feel that's a worthwhile role?

MR . NAISMITH: I think the reduction of risk on a new technology is an important function of government; however, the acceleration of the marketing process or the interaction with the market itself, I'm not sure couldn't be better done by the private sector. But I agree that the identification of new technnologies the reduction of the risk to the point that they can be picked up by the private sector is important.

MR. KAPUS: If I may move then to Karen. You had mentioned a stimulation of interest as a result of the new economics in decentralized power production, the small-scale hydroelectric installations experiencing a renaissance in municipal waste to energy conversion programs.

I've been given to understand that because of the high risk and the high cost involved in the waste to energy conversion programs that if Federal support in this area is withdrawn, there would be no continuation of these programs. Is this a reasonable assumption, or are you given to believe otherwise?

MS. ANDERSON: I think in a climate of high interest rates any major project like that becomes more questionable. Our members do have access to tax exempt bond funding, which still is much higher these days than they're used to paying. But the City of Columbus, for example, is going ahead with its solid waste fired plant. Most cities that can justify the thing can justify it without -- Nashville is going ahead with the second installation. I can think of a number that are going to go ahead whether the Federal government can help them or not. But again, not as many would as if they had the assistance.

MR. KAPUS: One area that was conspicuous by its omission here was that you made no reference whatsoever to the concept of district heating and cooling. Was that intentional?

MS. ANDERSON: No, I think I did or I meant to. I didn't explain it very well. We're very keen on district heating, and we would very much like to see, as you probably know, increased Federal support for district heating. That's one technology where a lot of systems in Minnesota, for example, very small towns have existing district heating systems that are becoming very expensive to maintain. They're not the latest technology. They're using steam instead of hot water. They're leaking, and it almost pays the city to scrap the whole system.

We'd rather see some help from the Federal government to invest in a new, more efficient system.

MR. KAPUS: It's really not a new technology, but it's a costly one.

MS. ANDERSON: Yes.

MR. KAPUS: Thank you. One last question before I get off. Mr. Cady, I realize it would be of no assistance vis-a-vis having to deal with a patch quilt of state standards, but just as a thought, had the association or the industry ever given any thought to generating and monitoring and standards program for the insulation industry itself? Certain appliance manufacturers have done this.

MR. CADY: Yes, we have considered it, but would we be believable? We could be claimed to be tooting our own horn, selling our own products, if we set insulation levels at the ones we thought were appropriate. R-60 sometimes is appropriate, but I don't know how you get it in the attic, so we would rather have some independent source of standards rather than from our viewpoint.

MR. KAPUS: I appreciate it, thank you.

MR. FRANKEL: Let me ask some more questions on the specifics of the Reagan program. Do you think that the increase in energy prices justifies an 80 percent reduction in Federal funding of conservation?

MR. NAISMITH: Is that directed to me?

MR. FRANKEL: Anyone who wants to respond.

MR. NAISMITH: I think price is the most effective thing that we see operating out there, and it's hard for me to say whether 80 percent is the right number, and those are not judgments that I make. But the most effective programs that I find tend not to cost very much, and the biggest effect I find in people who have to make decisions about what they're going to, whether they're building owners or homeonwers or whatever, I find that very strongly driven by price and nothing else.

So at least philosophically it seems to me that price is going to give the right signals, whether it's enough and whether the budget should be 72 percent or 80 percent or 43 percent, that's a separate issue. But I do see prices being very effective out there.

MR. FRANKEL: I'm talking about a cut of 80 percent.

MR. NAISMITH: Yes, I know.

MR. FRANKEL: Let me be specific then. A number of you have mentioned information and you talk about the need for local information. There was one program in DOE that attempted to generate that kind of information called the Energy Extension Service, and in many cases the Energy Extension Service has coordinated its activities with the local municipal utility, redoubled the impact on a certain town.

We've always thought that program was a pretty well run program, because they allowed it to be run locally, and the other program, I think, we would support continued funding for is, of course, the low income weatherization assistance program.

There's nothing to replace that, and it's just that those people need help.

MR. CADY: Also in answer to that, it also seemed to me that the DOE extension service was a duplication of a very successful one that has been in place for years, the Department of Agriculture group, and I never could figure out why there were two, when one was working effectively.

MR. NAISMITH: I think there's also a legitimate issue about quantity. When we suggested information is needed, one of the problems that many of the decision makers have had in the past is that there's been an enormous amount of information that it is very difficult for them to sort through it and make decisions.

I think a limited output of very focused information could be done fairly efficiently in terms of cost.

MR. ONDICH: I have a question for APPA. We were talking, as you probably heard, with the earlier group of witnesses about low income assistance programs. Some of your testimony addressed these types of programs, but are you doing any thing as specific as the EEI. 50-state, 10-unit study that directed towards low-income tenants.

MS. ANDERSON: Well, we're not exactly the size of EEI. We have a total of 30 staff members. We're a small outfit, non-profit. We never would have the money to do that. What we try to do is take examples of programs that our members have developed, cost-effective programs, and play them up as best we can in our magazine and our newsletter and things like that, when you've got 2200 basically towns out there. It's a little hard to coordinate their activities as if you had 300 major size utilities. So we're not doing anything directly.

DR. RIEGEL: I have a question for Sheldon Cady. You argued very strongly for preservation of building energy performance standards, as I understood it, for reasons that had to do with a fear of a multiplicity of conflicting state regulations that might affect either the insulation manufacturing industry or perhaps some other industries as well, home building operators that may operate across state lines, and so forth. Yesterday we heard from many people who testified that reductions in funds proposed by this Administration for state programs would lead either to the closing or a striking reduction in the scale of activities in state energy offices. If you consider that fact, I wonder if one consequence might be that the conflicting state regulation in the standards area which you mentioned may, in fact, be forthcoming. Another thing that I frankly wonder about and would like your reaction to is whether you feel that the states will be relying more extensively in the future on natural competitive forces that will be developing within the home building industry and improvements in the technology and in the general level of expertise and knowledgeability about conservation, the techniques to employ to see that houses are built to quality and high performance, or whether you feel that a strong pressure will continue to exist at the state level for regulatory action.

MR. CADY: That's a long question with lots of subquestions. The very first part I want to emphasize is that I did not argue in favor of BEPS, and I want to get that cleared up. I was arguing in favor of the research that had been paid for and accomplished under BEPS and the use of that for other purposes as far as standards are concerned.

A widespread education program would help to accomplish the level of competition that you were mentioning in the last part of your question, and that would undoubtedly be helpful to the consumer and the industry involved in energy conservation.

If state energy offices were eliminated, who would assume responsibility for energy conservation? It would be left again to the marketplace, I assume. Does -- would the marketplace -- I'm answering your question with a question. Would the marketplace in the future be adequately informed? I doubt it very much, and -- we're overregulated without a doubt, and I'm in the awkward position of saying, okay, get rid of some regulations, but not us.

I'm aware of what I'm doing in this thing, and I'm sure there are plenty of people who are doing that too, but we do feel that voluntary -- not regulations but voluntary standards -- are entirely appropriate.

MR. NAISMITH: Can I comment on the issue of regulation, building codes and the BEPS thing? We talk to builders a lot, and we also do a lot of training programs for building code officials, and so we work in that area a fair amount.

The real example of what happens when one tries to regulate the level of insulation in homes, for example, is the 90-75 based codes. My data on that says that first off in almost any market area, it is impossible for a builder to sell a home if it is only made to the 90-75 based codes.

And whether you talk about NAHB survey, whosever survey you take, the market is demanding a much higher level of insulation than the 90-75 code generally.

Now, of course, there are always some marginal operators. How we deal with them, I'm not sure, but the market is doing a nice job of being aware of the fact that insulation and storm windows and tightening the house is important, and the market is strong enough in that feeling that it's driving builders who tend to avert risk if they can to putting in much tighter homes, much more energy efficient homes than are required by the regulations in most places. So I think we don't have a lot of babes in the woods out there. I think the market is responding, and whether it's enough and whether we may need to press it more may be a valid issue. But there really is a lot of information out there, and there's a lot of response, and the builders are finding it, and they're building houses which reflect it, and they're way ahead of the regulation in most areas.

You just can't sell a house if it's only made to 90-75 base standards in most market areas where I talk to the builders.

MR. CADY: You missed my presentation, but I inferred the same thing. They're completely inadequate, but my question is what percentage of the builders are doing this properly and what percentage are not. Nobody knows, of course.

MR. FRANKEL: Also, we've heard data that even the best current practice is still 50 percent less energy efficient than is economically cost-effective over even, let's say, seven years occupancy of a house that many builders don't realize just how much more energy you can squeeze out of a house.

You can put a lot more insulation in, you can also put vapor barriers, triple glazing. There are a lot of conservation techniques that are still not part of common practice, yet are from the consumer's point of view, very, very cost-effective.

MR. ONDICH: As a follow-up on Gene's question, Alan Miller NRDC, yesterday said he surveyed, 18 to 20 building sites in the Northern Virginia area, and his informal survey indicated that builders in these high interest times are not installing overhangs, high efficiency furnaces, or adequate insulation because of the cost.

MR. NAISMITH: Part of that I agree with. I think, in general, we'll find that the insulation is going in. There are many issues in terms of how one deals with the energy efficiency of homes other than the shell that are not well understood, and that's one of the things I specifically mentioned.

We have a lot of understanding, I think, and a lot of response for insulation and storm windows. We don't have nearly as much response in terms of quality control, in terms of passive solar, although we're seeing much more of that, in terms of selecting mechanical systems on some sort of optimum basis, and we're now seeing builders beginning to respond to the question of what sort of mechanical system should they use. But that information process is very early, very meager, not very widespread. The one about insulation and storm windows, I think, is much more generally understood.

MR. KAPUS: Are you running into a problem in your circles now that the houses are becoming tighter, are the builders showing any kind of concern for air quality within the structure itself?

MR. NAISMITH: We look at a lot of buildings, and we're not finding very many buildings that we think are getting below the half air change per hour that I feel is going to get us into problems.

We are finding lots of other things that are happening. For example we're finding houses where the fireplace is getting its air supply by pulling it down the chimney of the gas furnace, because that's the only opening in the shell. See, that's the kind of interaction that we're getting into, and one of the areas I specifically mentioned in terms of interaction, and what's going on, we're seeing lots of subtle things that are happening out there that need to be understood much better, which is why we think this whole business of looking at existing houses with conventional techniques is really important.

MR. FRANKEL: One of the things I feel I'm hearing you say, all three of you in different ways, is that even though prices are a very strong motivating factor, there are still market barriers, market imperfections and that it is -- in areas such as lack of good information, sometimes lack of upfront capital, lack of understanding of how equipment works -- there still is a proper governmental role to play.

Is that an accurate paraphrase of what you said?

MR. NAISMITH: Yes, how large that government role is is an issue certainly. Certainly an important critical government role.

DR. RIEGEL: Well, I wish to thank the witnesses for appearing with us today and to ask the following people to come forward, if they are all here. Richard Esteves, Alan Rimer, if he's in the room, and Robert Manahan. We'll begin with Mr. Manahan.

Mr. Manahan is with the Thermal Insulation Manufacturers Association.

MR. MANAHAN: Good morning. As Kurt pointed out, my name is Robert C. Manahan, representing the Thermal Insulation Manufacturers Association. The membership of this 41-year-old association consists of a majority of manufacturers of insulation products for a wide range of applications in power and process industries, in air handling systems, high temperature specialty work in the form of refractory fibers, as well as insulation for building envelopes -- the roof, the wall -- and for pre-engineered metal buildings.

In fact, TIMA is virtually the entire producing segment of the insulation industry dedicated to our country's most vital need, conservation of energy. Through TIMA, both its individual member companies and the public are benefitted by the identification and definition of increasingly effective methods for reducing energy waste to a minimum and for creating opportunities for better energy utilization.

The specter of Americans once again waiting in gas lines is a possibility that will continue to exist as long as we depend on foreign sources of oil. Obviously, energy conservation measures must be implemented by this nation's motorists and automobile manufacturers to lessen the possibility of gas lines, but conservation measures shouldn't begin and end with the gas pumps.

There is also a staggering potential for energy saving within the nation's industrial sector. At current cost, industry can save well over $23 billion in the 10 years or one billion barrels of oil equivalent, and if energy costs continue to skyrocket, industrial energy conservation will have an even more salutory effect on the nation's economy.

An extensive TIMA study of 15 of the most energy intensive industrial groups in our economy shows that industry can sharply reduce Amerca's dependence on foreign oil simply by employing insulation, a well known conservation measure.

Industrial use of insulation may seem like an obvious solution to most people, but the unfortunate fact is that industry as a whole has not committed itself to a full-scale energy conservation program.

Energy cutting measures employed by industry to date have primarily been simple, housekeeping items such as repairing broken windows, turning off equipment and lights when not in use, and setting back thermostats. With minimal capital investment, these have increased awareness in a sense and effected an immediate, if modest, savings.

However, to its credit, it is encouraging to note that the Industrial Energy Efficiency Improvement Program, created under the Energy Policy and Conservation Act, reported a weighted average energy efficiency improvement of 15.4 percent at the close of 1979 as compared with 1972 efficiencies.

Total energy savings for the reporting corporations in 1979 amounted to 2.2 quadrillion BTU's per year, the equivalent of over one million barrels of oil per day, compared to what would have been required in 1972 energy per unit of output levels.

The DOE 1979 annual report to the Congress and to the President indicated that the most significant low cost improvement of energy conservation measures is the use of increased insulation and in process equipment.

But according to our TIMA survey, there is still a need for true long-term energy conservation in industry. This can only be accomplished by the application of high performance insulations to industrial equipment and piping, resulting in savings of hundreds of thousands of barrels of oil equivalent each day.

The cost of bringing current insulation levels up to energy efficient standards is a necessity which will result in a dramatic return on investment for business and the nation.

TIMA conducted the study and it's entitled, "Industrial Survey of Steam Process Piping Insulation," which exposed an unquestionable need for industrial energy conservation. The TIMA study focused on steam process piping which comprises 42 percent of total industry use. In all, 15 Standard Industrial Classification groups representing 85 percent of total industrial energy use were examined. These groups included the chemical, lumber, paper, petroleum, plastics, food, metals, stone, glass and clay industries.

TIMA completed the study by researching the insulation practices of 500 typical industrial plants representative of the entire country, as well as each one of the industrial classifications. The report reveals that there are 325 million feet, two and a half times around the globe, of steam process piping in use by these industries in the 15 groups.

Nearly 72 million feet of this type of piping is completely uninsulated. The rest of the piping on the average is under-insulated by today's standards, with only about 1.7 inch thickness on large piping, that's above two inches, and one inch on small piping. To meet today's and tomorrow's higher fuel costs, these thicknesses should increase, on the average, to three inches on large pipes and two inches on small. These were calculated using TIMA's ETI, that's Economic Thickness of Insulation computer program.

The wasted energy that results from uninsulated and under-insulated steam piping, we have estimated at 305,000 barrels of oil equivalent per day. At $22.33 per barrel of oil equivalent, the cost for this is $6.8 million per day or $2.3 billion per year, more than is used by the entire rubber and plastics industry, and exceeds the combined total of textile and lumber industry use.

The study points out that the total cost of insulating bare pipe and replacing existing insulation with a more effective type would be $6.2 billion. But the study went on to say that the payback period would be an astonishingly short 30 months based on the average price per barrel of oil equivalent.

Future savings would be even greater as the cost of energy continues to rise.

The TIMA study suggests support of Senate Bill 750, entitled "Industrial Energy Efficiency and Fuel Conversion Tax Incentive Act of 1980" introduced by Senator Wallop of Wyoming and its companion House measure, H-2650. These will serve as amendments to the Internal Revenue Code, and addenda to the National Energy Act of 1978.

The bills raise the tax credit allowed for new energy conservation investments from 10 percent to 20 percent. This, in addition to the 10 percent investment tax credit established in the 1978 Energy Act, makes for a total of about 30 percent for new conservation investments.

Additionally I invite your attention to Senate Bill S-1288 entitled "Commercial Business Energy Tax Credit Act of 1981" introduced by Senator D. Durenburger, and this seems to fill a void and encourages greater conservation by commercial businesses through greater use of energy saving equipment. It, too, provides a 20 percent energy Federal income tax credit for installing insulation in an existing industrial, retail or commercial building or facility.

Qualifying property would include not only insulation, but also a variety of other items designed to reduce heat loss or gain when put in place after 1980 and before 1987 with a useful life of at least three years.

One would assume that the return on investment for insulation is so attractive that it is a top priority capital expenditure and that bare surfaces and poorly insulated pipe and equipment would be autmatically insulated, just like poorly insulated attics. Yet there are still 32 million under-insulated houses in America, and, as the study shows, 253 million feet of underinsulated steam pipe.

The disinterest in insulating possibly stems from high interest rates and economic uncertainty which cause management to pare down its list of investments. Conservation investments often are the first to be cut or eliminated unfortunately.

The obvious need for insulation has been clearly substantiated in the TIMA study. If it takes tax credits or other incentives to encourage conservation, it is a wise investment for the future of America. The sooner we lessen our dependency on foreign oil sources, the stronger we become as a nation.

Industrial energy conservation will be expensive. Yet billions of dollars are being spent by the auto industry to save gasoline, and millions are spent on home insulation, which does qualify for a tax credit.

Americans must choose the most direct and effective means of conserving energy. Considerable time and taxes have been spent in research and development of the Department of Energy's Building Energy Performance Standards, BEPS, for commercial buildings. Implementation of the long delayed standards has been stopped or put on hold because of controversy over its prescriptive nature and added building costs. Yet even BEPS is projected to save only 216,000 barrels of oil equivalent per day, in comparison with the 305,000 barrels estimated saved if industry follows the common sense insulation method.

TIMA believes that it is past time for industrial users of energy to make the financial commitments needed for major savings that must be achieved in the future if we are to lessen our dependence on foreign fuels. Incentives such as those in the referenced legislation may be the best means of attracting scarce investment capital to energy conserving uses. Energy saved in the industrial sector and commercial buildings is an achievement that is worthy of national attention and encouragement.

DR. RIEGEL: Thank you very much. Before turning to questions, we'll hear from Mr. Esteves.

MR. ESTEVES: Good morning, I'm sorry for being late. I had a little trouble getting around the beltway.

My name is Richard Esteves. I'm head of Conservation Programs for General Public Utilities. We're by no means one of the largest companies in the United States, but we do have the enviable pleasure of owning Three Mile Island and being in a very capacity-short situation.

We are purchasing enormous amounts of outside power from neighboring utilities, and even from Canada. So it's to our corporate benefit and especially the benefit of our customers to do whatever we can to reduce the need for electric usage in our service territory, especially during any on-peak periods when purchased power costs go up, and I'm just talking about the base energy costs, go up about 10¢ a kilowatt hour.

We've had instances where we're buying power from other utilities at about 15¢ a kilowatt hour, and when you're only able to sell these for about 5¢ a kilowatt hour, it becomes rather difficult. I mention this not for sympathy, but simply to establish the context that GPU's interested in any cost-effective conservation programs that we can get involved in with short-run payback.

Now let me turn to the subject of the meeting, which is what happens now with the proposed changes in regulations and what's going to happen with conservation efforts.

Our general feeling is: "Them that wants to will, them that don't want to, won't!" I'm not talking here about utilities, regulatory bodies and institutions.

We've seen over the past three or four years a number of major regulatory steps to increase conservation in the United States. Yet we can look at these programs and see a widely divergent effectiveness within the programs depending upon locality and local circumstances. Yet they're all coming under the same set of guidelines and regulations.

Why? It goes back to the people who are trying to implement the programs or are claiming to try to implement the programs. It's a matter of local concern, and it's a matter of local effectiveness. I do not believe, and the company does not believe that the way to do this is through an extensive set of regulations at the Federal level. However, we do strongly encourage the continuation of a number of development efforts and research efforts in the energy conservation field.

Someone earlier mentioned the Twin Rivers project. This is the type of thing that we need, an examination of what is currently available and a very objective in-depth analysis of the cost-effectiveness of that program. Our own R&D programs are frequently looked upon somewhat askance by utility regulators or by the manufacturers or by the builders or by consumers.

When we have had an independent body, such as the National Bureau of Standards or the Environmental Protection Agency or the DOE that we can say has completed this study that we have faith in, and here are the results and we recommend that you move along in this area, we've gotten good response from that.

Let me take an example outside of the energy field. For years, we've had tire evaluations which were completely voluntary and nobody paid any attention to them until fairly recently, when the marketplace picked it up. Now there are a number of tire manufacturers that are advertising that they're in compliance with these voluntary standards. I believe that is what is happening in a number of areas in the energy field, that thermal insulation people and others are picking up information and data that was published as a result of studies by the DOE and others and saying this is what we can do at your local place, and the pricing mechanism is forcing that into the marketplace now, much faster than the Federal regulatory programs or the local regulatory programs were doing prior to this.

I think this morning Dick Russell from LILCO discussed the RCS program. I have the pleasure of working with two RCS programs, one in Pennsylvania and one in New Jersey.

These two are approved by DOE and yet there are items in one state that were specifically not approved by DOE for the other state. There are items in one state which had previously been thrown out and were put back in within a couple of months. Yet in both states, responses to the RCS offer is significantly less than one percent. Our Pennsylvania Electric Company had previously put out an offer of its own, and the response to that was well over five percent. I believe someone else mentioned this morning a New York Power Authority effort to which response was 16 percent.

I'm not saying that the auditing program is not a good program. It is a good program. It's an outstanding program. It is a necessary program. However, I do not believe that it's going to be effective unless the people at the local level are interested in doing this program, and the same is true of many of the other programs that were going under evaluation.

Now, I guess it comes back to the old story of you can lead a horse to water, but you can't make it drink. Well, some of the regulations proposed that, maybe if you beat it over the head a couple of times, it'll start drinking. Well, some of these horses are pretty muleheaded, and they'll just wind up sticking their muzzle in the water and swishing it around a little bit, and you'll think they're drinking. I think that's what's happening with a lot of the proposed programs.

The question came up earlier about whether or not the pricing mechanism is sufficient now to justify an 80 percent cut in the budget. That presupposes that the previous budget was cost-effective, and we have seen in many cases where that program was not cost-effective.

I don't know if it deserves an 80 percent cut, but I do firmly believe that the previous budget was not cost-effective and was not cost justified. So even before we got into the pricing mechanism, I think we have to examine the value of the individual programs.

I'd like to do that quickly with a couple of programs in particular. The RCS program, I believe, is a good concept. I believe much of the work that was done at Oak Ridge in evaluating audit procedures, cost benefit analysis and this sort of things is extremely valuable.

We have incorporated much of that information into our own efforts and recommendations. What has not been valuable is the requirement for each state to have a uniform system across the state and for all the states to have their program approved at the Federal level. This has resulted in some very significant problems in implementation at the local level, and it has certainly undermined the ability of the local utility companies or the oil manufacturers or others to develop a program which they believe is cost-effective for them and for their customers.

The commercial program I'm not that familiar with except that I did notice in the cost benefit analysis which was done as part of this, there was a significant difference between the base program in which there were mandatory rules and the optional program which was totally voluntary. The significant difference that came about was in the response of customers, the building owners and the builders, and yet this was not affected by whether or not the rules were mandatory or voluntary. I really don't see an appreciable need for a commercial program.

Information services - I would like to separate information services into two parts. One is information provided to the conservation industry which is a very wide group involving the solar industry, the insulation industry, utilities, energy producers, everyone else which is more of a research effort.

This has been extremely valuable. Under no circumstances do I suggest that we cut those back, and I would urge that there be more work done in this area. The other side is consumer information.

Time after time, our own evaluations of what our customers are interested in learning from us is that they have had it with conservation information, unless they're about to do something themselves. They say that they've already done as much as they can reasonably do, and don't send them any more information on conservation. When they want conservation, then they'll come and ask us for it, and we've seen this time after time.

I suspect that the information that is generally provided by utilities across the country is the same. It's probably the same as that which is provided by DOE and by the National Solar Institute Clearinghouse, by the manufacturers, and many others. You find a significant repetition of this effort.

I believe that many of the consumer information programs that are being cut back or being suggested for cutbacks are duplications of existing efforts, and as such will not be significantly missed. What will be missed if they are cut back are those efforts which border the differential between a strict research effort and the ability to get that information into the commercial marketplace.

The weatherization question, as I understand it, is between weatherization as a separate program and that of rolling it into a block grant for state use. I must go back again to the idea that you can't force a state or an organization to do something it does not want to do, and whether this be with weatherization or anything else, it still holds true.

Again, I have the pleasure of working with two separate weatherization organizations, one in New Jersey and one in Pennsylvania. In New Jersey, there was a good deal of money spent on weatherization, and in my home county, I know the people rather well, and they're very conscientious people.

However, their feeling was one that if the people wanted weatherization, they were going to see to it that they went by the book. For example, in the entire county, there was one location where you could sign up for weatherization services, and you had to do that in person.

We tried to get weatherization forms put in our local business offices for our own indigent customers. That state refused to do that because they had to screen the individual applicants, and perhaps there is a reason for this. I don't know, but the fact is that that state was not interested in doing more.

In the other state, they were much more interested, a much more out-going program, so much so that we wanted to assist them, and we had a program that would save a particular user of electric water heating approximately $88 to $100 a year. It required some equipment. We offered to purchase and give them the equipment. They said, fine, that they would like to do that, but that it would take them about a year to process the changes in their standards in order to allow their work people to install that equipment.

Incidentally, by the time we got around to doing so, the cutbacks came, and they said, no, we can't do it, because we're waiting until the weatherization program has settled down. Again, they stated that they had a plan approved by Washington, and that they could not deviate significantly from that plan without going through public hearings and approvals.

One last thing on the weatherization program: there's a fuel assistance program which has been very successful in temporarily alleviating hardships for people who are short on heating fuel. However, in neither of the states which I was involved were they using the applicants for fuel assistance as a target group for the weatherization program.

In one state, they refused to do that, because they're handled by two different departments, and in the other state, they're requested to do that at our suggestion and were told they could not do so because it was confidential information and that they would even refuse to do a special mailing to those people because that was invasion of privacy. These are important considerations, invasion of privacy and others, but yet I feel that many of the people who are requesting fuel assistance would have benefitted significantly and would have been very happy to have been informed and to have been solicited for free insulation and other materials.

I would like to indicate one thing, and that is I'm a member of the EEI, investor owned utilities, and we have some excellent programs, and many of our individual members have outstanding programs.

However, some of the very best programs I've seen in the United States are coming out of public power companies, and I know Karen was here a little while ago speaking about this. I believe that the reason for this is not because of the profit question, but simply because they have much greater flexibility on a local level and do not have to concern themselves significantly with getting regulatory approvals.

Time after time, utilities have been able to go to an REA co-op and suggest to them programs which we've taken six months or a year to get developed and get approved as part of our way of doing things, and they've been able to put it into effect in three weeks or a month. I wish that we had that flexibility. I believe anything that will help move the decision-making process closer to the customer, closer to the point where the customer interacts with the company or the energy supplier or the service suppliers, the insulation manufacturer, the closer you can get that decision process to the contact point, the more effective the program is going to be. Thank you.

DR. RIEGEL: Thank you very much, Mr. Esteves. We'd like to go now to discussion involving members of the panel.

MR. ONDICH: I have a question for Mr. Manahan. For those 500 industrial plants surveyed in your study, did you find any difference in the types of cost accounting system used for energy expenses in those plants, Do you think that would influence their decision in any way toward energy conservation measures?

MR. MANAHAN: Possibly so. I'm not sure that the report actually highlighted the differences, however. There are a lot of personal prejudices and so forth on how various firms approach a common problem of that nature based on previous experience and proximity to local production points -- that sort of thing -- which reflect on economics, but I don't think the report actually highlighted the differences.

MR. FRANKEL: Mr. Manahan, I must admit I'm shocked by your testimony, because after all of the presentations we've had this morning, telling us how increased prices were going to send the signals that are needed to effect all this energy conservation, now you're telling us that with signal that you can get a 30-month payback these industrial firms are not responding, and I'm wondering why aren't they responding. Why do we need an additional tax credit such as you're proposing if the marketplace is, in effect, sending them this very clear price signal?

MR. MANAHAN: Well, we can only observe on what we have perceived, and what we have perceived is a rather intense study in the last four and a half to five years. We have seen by actual accounting the thicknesses of insulation on the average increasing only as little as about a quarter of an inch on large diameter piping and as little as two-tenths of an inch on small diameter piping, and that, to us, doesn't translate into a dramatic shift in the recognition of the need to conserve energy.

MR. FRANKEL: Why won't industry do it on its own with a 30 month payback?

MR. MANAHAN: I think all industry today is pretty well strapped for disposable funds. Granted, some industry, perhaps the chemical and oil industry in the recent past, the last year and a half, two years, have experienced an improvement, a substantial improvement in profits. It wasn't too long before that I think that most all of the firms were suffering in profit generation.

Again, I think there are reasons for that, possibly an overburden of regulatory requirements that soaked up their energies, their resources, their time, directed at, in many cases, much needed improvements, but perhaps also trying to respond to an overkill posture.

MR. FRANKEL: Isn't industry aware of this potential savings?

MR. MANAHAN: We're doing our best to carry the message to them. One thing that we've started I think is rather unique. It happened right here in Washington as recently as May 14 where we collectively with the National Bureau of Standards, the National Institute of Building Sciences, the National Insulation Contractors, the union itself, that is the Asbestos Workers, conducted a full day seminar/workshop on the merits of proper insulation materials, their thicknesses, their application techniques.

It, unfortunately, became, in my judgment, more of a seminar than a workshop, but at any rate, it was fairly well attended. I think there were something like 130, perhaps largely government personnel, but some private sector people there. The results were such that we were encouraged to proceed on with a like program to other sections of the country, and the planning committee has had two meetings to program a similar seminar/workshop for the City of Houston, probably early next year. I think mid-February is being looked at as a possibility.

The emphasis in the new program will be to try and get back to more of a workshop technique where we engage, somehow, the audience in the actual problem solving techniques that will be demonstrated there.

MR. FRANKEL: Are you aware of the study by Bob Marley at the DOE Policy Office, where he argues that of the 15 or 16 percent energy efficiency improvement by industry only about 3 percent is a response to increased prices. The remainder is the continuation of trends that existed before 1973 when energy prices were, in fact, declining, and industry was still improving its efficiency by about 2 percent per year, also of switches by consumers to less energy intensive products as the more energy intensive products become more costly, also a switch to more labor intensive industrial practices which are less efficient from a productivity point of view, but use less energy. Thus only a very small fraction of the actual response that industry has made so far can be attributed to direct response to higher prices. Do you know about this study?

MR. MANAHAN: No, I'm not acquainted with that particular study. My associate handles DOE and I don't have that much traffic with them personally.

MR. KAPUS: Just one question of Mr. Esteves. Early this morning the implication was advanced that the probability is high with some of the cuts that a good portion of the state energy offices are going to be eliminated. From your perspective, what kind of an impact, if any, would that have on your firm if they were eliminated say in New Jersey and Pennsylvania?

Do you rely a great deal upon interfacing with them?

MR. ESTEVES: No, we don't. The state energy offices to date in those two states have not had a significant impact on the public or the commercial sector, although the potential for assistance is significant, and has been. To date, I think the results have been relatively small compared to what was available prior to that in the legislative branches through the energy committees and through the normal regulatory agencies that were set up at that time.

MR. KAPUS: Thank you.

MR. FRANKEL: Mr. Esteves, I share your distaste for Federal regulatory programs that overly specify what a state or another organization is supposed to do.

In the case of the weatherization program, there are two problems that are often raised with the Administration proposal. One is that it's one thing to fold weatherization into block grants, but then when you cut the block grants by 25 percent, and the weatherization has to compete with existing programs for a smaller pie, it seems to many people that it's very likely that, in fact, what you will see is quite a lot less weatherization.

The second problem with the overall block grant approach is that from time to time states have chosen to take block grants intended for one purpose and use them for something entirely different, such as taking a block grant designed to improve housing in low income areas and build a country club in an upper middle class residence. It's that kind of abuse of these Federal programs that leads to these kinds of regulations. So my question, I think, is how do you deal with those two problems, with the concept of folding weatherization into a block grant program?

MR. ESTEVES: I believe the block grant programs have review procedures that are supposed to preclude that type of activity in which money in a block grant is used for items which are not counted in the block grant. If that sort of activity is taking place, and I'm sure it has taken place, the problem is not necessarily in the block grant procedure, because that could happen in individual allocation procedures as well.

As far as your first question is concerned about having a smaller pie, that is a difficult question. I do not like seeing the weatherization program cut, whether it be done directly in terms of a 25 percent cut in a weatherization line item or whether it be lumped in with a number of other programs and all the programs cut by 25 percent.

I think that whatever its merits that it should be handled locally. I personally believe in a weatherization program. I think there are some difficulties with it which I'd like to see corrected, but as I say, I believe in it, and my company believes in it very strongly. I would not want to see anything that would harm it.

I do, however, believe that the decision as to what is most important for the locality should be made by the locality. We've had many instances in which block grants that were meant for one thing were used for police and fire protection. That's probably the most common item for a misallocation of grant money in our part of the country, which is the greater metropolitan New York area.

I don't like that happening. But it was certainly the decision of the local people that to them it was worth more to spend money on that item, at least in the short run, than it was to spend it on whatever the grant was meant to be for.

DR. RIEGEL: I would like to thank our final two witnesses this morning, Mr. Manahan, and Mr. Esteves. It is now the lunch hour and we will break, reconvening again promptly at 1:00. We have a roster list of approximately 10 more witnesses for the afternoon, and I look forward to seeing you then.

(Whereupon, the meeting recessed for luncheon.)

PROCEEDINGS
JULY 15, 1981
AFTERNOON SESSION

HEARING PANEL

Gregory Ondich	Section 11 Program Manager Environmental Protection Agency
John Millhone	Director Buildings and Community Systems Office of Conservation and Renewable Energy Department of Energy

WITNESSES

Randall Vosbeck	American Institute of Architects
Alan Rimer	Management Improvement Corporation
John Harkins	Mechanical Contractors Association of America
Carol Allen	N.J. Community Action Program Executive Directors Association
William Chandler	Environmental Policy Center
Katherine Ellett	League of Women Voters of Maryland
Stanley Ezrol	Fusion Energy Foundation

MR. ONDICH: Good afternoon. My name is Gregory Ondich. I will be chairing the hearing session this afternoon.

We have some changes for those who are following this afternoon's schedule. Dr. Riegel and Dr. Frankel won't be joining us on the panel, but we are pleased to have join us Mr. John Millhone who is Director of Buildings and Research in the DOE Office of Conservation and Renewable Energy.

Those are the changes on the panel. As far as the witnesses are concerned, we are also having some changes this afternoon.

As you can see, Mr. Rimer will be one of our witnesses in the first session followed by Mr. Vosbeck, President of the American Institute of Architects, and Mr. Harkins representing the Mechanical Contractors Association of America.

For those who may be joining us this afternoon for the first time, I would like to note the changes from the scheduled witness list. Both Mr. Manahan from the Thermal Insulation Manufacturers Association and Mr. Cady from the Mineral Insulation Manufacturers' Association testified this morning, and unfortunately, Mr. Roccapriore from the Solar Power Institute will not be able to join us. Likewise, we will have some changes later this afternoon. I have just learned that Ms. Habib from the National Wildlike Federation will not be able to join us. I will advise you of the other changes as we proceed.

Now, I would like to start with the first group of witnesses this afternoon. What I would like to do is follow the same procedure that Dr. Riegel used. We will have each of the witnesses present testimony, then we will have some discussion about that testimony following all three witnesses.

MR. RIMER: How much time do we have?

MR. ONDICH: We would like to keep your comments to about 10 minutes, if we could, Al.

MR. RIMER: Are you looking at breaking this at say quarter to two or something?

MR. ONDICH: For your group we would like to finish the presentation and discussion in about 45 minutes, then another group of three; breaking after that. With that, why don't we start on the far right with Mr. Vosbeck from the American Institute of Architects.

MR. VOSBECK: Thank you.

MR. ONDICH: One more administrative thing -- the microphone; you might want to move the other one.

MR. VOSBECK: Thank you. I am Randy Vosbeck, and I'm President of the American Institute of Architects, and I'm also a practicing architect in Alexandria, Virginia. Also, today, I am representing the Passive Solar Industries Council which is an umbrella group of construction industry organizations which are interested in promoting passive solar building design.

I'd like to talk to you a little bit about AIA's and the passive solar building industry's views on some of the recent directions of the Federal energy conservation efforts which appears to be guided by two general principles: The first, higher energy prices will speed up conservation efforts: and the second that the private sector will be able to pick up activities that were previously carried out by the Federal government. I'm going to focus my comments on two areas of the Federal conservation program: First, information dissemination on buildings and energy use to the design profession and the building community, and, second, the research priorities for improving the energy efficiency in buildings.

These two areas, information dissemination and buildings research, are beginning to feel the real impact of these new Federal directions. First, let me comment that since 1973, our AIA members, architects throughout the country have reported a perceptible increase in the number of clients who are concerned about energy operating costs and are demanding that buildings be designed to use less energy.

Now, obviously there are several reasons for this. First, obviously higher energy costs have a significant impact. Additionally, the availability and use of better technical information by both building designers and clients has helped.

And, lastly, designers and owners have, I think, a genuine concern for the impact on our nation's economy of the diminishing supplies and increasing demand of fossil fuels.

Most building designers can show their clients the economic benefits of more efficient buildings. Many design professionals can now tell clients the payback periods for a variety of design options, and, in turn, clients use this information when making their investment decisions.

We feel that most of this information and most of this capability is a direct result of the Federal energy conservation program. Five years ago, such terms as energy audit, retrofit, thermal mass, solar access, daylighting, life cycle costing were not commonly used terms in the design and building industry.

This information flow has speeded up innovation in the building industry; design manuals, seminars, computer programs provide tangible design information for designers willing to try new solutions. This design information and criteria are important to encourage building design innovation by architects and engineers.

However, we know that the trial and error approach is not appropriate for the building industry. A building constructed with an energy approach that is not based on proven design criteria and then non-functional cannot be thrown away. You can't throw away a building.

The Federal program has both speeded up the transfer of information as well as increased the availability of it. We know that this information has produced a better informed design community and a better informed clientele, and without a question, this is yielding a better stock of buildings.

Unfortunately, we now find this information flow about to be cut off. Funds for seminars and conferences have been severely reduced, and the printing and availability of most publications has been eliminated. Now, of course, industry will be able to pick up some portion of these information dissemination activities. My own organization, the American Institute of Architects, has begun an unprecedented energy education program called the Energy Professional Development Program, and the AIA is spending about a dollar out of every $12 of our membership dues on this program, about a million dollar program, to educate and train our members on energy conscious design, and we'd like to point out that our energy education program is a direct out-growth of the AIA research corporation's participation started back in 1976 in the HUD/DOE buildings energy performance standards program.

While building a base for a regulatory program, we found out how to increase the proficiency of architects to design energy efficient buildings. We plan to reach over 8000 design firms with this energy education program. Our current schedule calls for about 200 educational seminars in the next three years. But I think it's important to point out, and we want you to know that there are many types of information activities that the AIA or other segments of our industry just cannot take over.

We cannot reduce large scale computer programs such as DOE-2 and BLAST into simulation programs for hand-held calculators that our small practitioners so urgently need, and I really don't think the computer industry is going to provide this for us either. We cannot educate the banking and investment communities about the benefits of energy efficient buildings, and this is desperately needed. And we cannot conduct valuable research on materials and building systems that we need to improve energy efficiency -- which brings me to my next point of concern.

The next generation of energy and building research, -- as we understand it, the new directions of DOE call for a basic R&D approach for building products and components with the primary emphasis on long-term high risk research with unknown potential benefits and less emphasis on demonstration, commercialization and understanding the performance of occupied buildings. We understand that most all research projects have been eliminated that have potential to help the industry solve its short and mid-term problems. Now, as an architect and a building designer, I'm dismayed when I see that this high risk emphasis has eliminated many ongoing research projects, many of which are close to providing solutions to technical problems that the industry cannot solve itself.

I question the economic efficiency of turning off potentially beneficial projects in midstream. The entire building industry is made up for the most part of small firms. Most architectural firms, for example, contain nine or fewer members. These small firms will not be able to pick up the integrated research on a national scale that has characterized much of the Federal buildings research. A design firm cannot go to product and component manufacturers and ask them to provide coordinated research for materials and systems.

The building industry just cannot underwrite national programs on energy performance in buildings. We cannot instrument and monitor the performance of a nationwide sample of occupied buildings. We will not be able to advance the methodology of estimating the energy performance of various design options.

We must stress that, in spite of the construction, industry's annual contribution of about $127 billion to our nation's economy, we're a very diverse and fragmented industry, and I might add, the construction industry is quite soft right now in many parts of the country.

We all know the state of the housing industry and high interest rates have slowed commercial and industrial construction as well. We should not expect our construction industry to pick up this additional burden. I believe that one result of less federal involvement in the development of computer programs will be the proliferation of proprietary computer programs that model and estimate energy performance. One large development and construction firm has already developed an innovative program that predicts energy performance. They sell its analysis through a service to other design firms. This practice means that the user will always be dependent on the service and unlikely to learn the effects of his design decisions on the program outcome. One of the greatest needs of the building industry is to understand how effectively to retrofit existing buildings. Both residential and commercial projects are needed. 80 percent of the existing building stock will still be here in the year 2000. Effective retrofit is a most difficult problem for designers. Retrofit options are frequently in conflict with fire and safety codes. To meet all the conflicting codes is frequently a very time consuming and expensive proposition and existing tax credits are not adequate incentives for building owners to take on this capital intensive venture.

It's our assessment that DOE has not yet begun to scratch the surface in encouraging retrofitting of existing buildings. Without some continued Federal assistance, building designers will not be able to solve the problems that accompany energy efficient buildings. The interior air quality of super-insulated buildings and the psychological effects of buildings with fewer windows are just two of the problems that require additional investigation.

I wish I could be optimistic that the new program directions would create new opportunities or efficient allocation of the remaining resources. However, we question the wisdom of allocating the remaining Federal funds to high risk projects, especially when some short-term studies need just a small amount of additional assistance to conclude them.

How can the Federal government help during the period of transition? My answer is simple. Let the building industry assist you to allocate the remaining resources to problems that really need solving. We believe we know best what kind of research and information is needed to provide more energy efficiency.

We're willing to accept a leaner Federal budget, but we must voice our strong concern about the few remaining funds going to uses that may assist us five years or further in the future, particularly now when the entire industry is lacking vitality.

Allocation to industry priorities will help us get through the slump until the industry is on the upswing and able to begin to take on more responsibilities. So as the American Institute of Architects' current president and as an architectural practitioner, I'm less than optimistic about the abilities of a fragmented industry such as ours to carry out the components of a successful research program that would provide architects and engineers with the tools and the information they need to carry out energy conscious design.

Therefore, I'm asking you to consider our priorities for a redirected program, coupled with industry effort to push energy efficiency forward, a limited amount of Federal assistance will enable us to move toward meeting the goal put forth by DOE's Solar Energy Research Institute, that is a reduction of 30 percent by the year 2000 for energy use in the environment. Do not let the lack of information and new research impede the building industry from attaining this important goal. Thank you.

MR. ONDICH: Thank you, Mr. Vosbeck. I recall your assistant telling me that you had to leave early. Is that still the case?

MR. VOSBECK: Yes.

MR. ONDICH: I will make a small change in that regard, particularly since you mentioned this about a week ago to me, and ask if Mr. Millhone would have any questions of Mr. Vosbeck?

MR. MILLHONE: I appreciate the thought that was given to your prepared remarks, and the suggestion of closer cooperation in determining the use of funds that are available and think that's a constructive suggestion that DOE should look at right away.

I had just one question that occurred to me. In your discussion of the importance of focusing on the retrofit of existing buildings, do you see the need there as primarily one of research or of information dissemination or one of financial incentives?

MR. VOSBECK: Well, Mr. Millhone, I think that a balance is needed. I think that we must have some financial incentives, -- and the financial incentives obviously to the building owners for the most part. Building designers though are faced with needing some research on just how to approach the redo of these buildings that were designed, you know, 20, 30, 40 years ago with no energy efficiency in mind, and just how to accommodate an efficient mechanical system into a building shell that is not designed for it, how to diminish window sizes, how to do some of this retrofitting within some of the life safety code requirements we have now has gotten to be a major concern for many architects around the country. So I think it's sort of a combination of the three things that are needed.

MR. ONDICH: I just have one question. When you suggested the building industry assist the federal government in the direction of future research, what mechanisms would you recommend?

MR. VOSBECK: Well, I don't know that I've got a specific answer on that, but it seems to me that there is not much of a communication dialogue now between most of the industry and DOE. Somehow we've got to, I think, start talking to each other more than we have been of late, so that we can -- so you can hear our concerns, and we can hear yours. But as to a precise mechanism, I don't know that I have one other than just start establishing a communication dialogue. It's not now existing other than in meetings like this, and this is one of the first, and, you know, I hope that we can expand on this kind of a meeting in a less formal way and really sit down across the table and talk about some of our concerns with the appropriate people.

MR. ONDICH: Thank you. With that, I would like to move on to the next witness, Mr. Alan Rimer, from MICA.

MR. RIMER: I'm Alan Rimer from the Management Improvement Corporation of America in Durham, North Carolina. I'm Senior Vice President of the division that deals with energy studies and identifies energy conservation (cost reduction) measures for our clients in both the public and private sectors.

In March of 1981, of this year, the Department of Energy outlined in their public discussion package for the national energy plan a statement which I think is key to the testimony that I'd like to give, and that is that the government's role is to establish sound public policies which are based on economic principles and national security concerns and a due regard for environmental value, so that individuals, and this is the part I'd like to emphasize, and firms in the private sector have the incentives to produce and conserve energy efficiently. This should all be consistent with the national energy policies.

So the objectives of this testimony that I'd like to give are threefold. First, is to offer a private sector company's perspective on some of the issues which affect the development and implementation of a functional comprehensive energy conservation program which is an integral part of the national energy plan. Also to offer some recommendations on the government's role in conservation given the changing funding environment. And finally to discuss very briefly what our firm has done to assist public and private sector clients in the conservation effort in light of some of these changes. I believe this will highlight some of the problems that are inherent in the program now.

I personally view conservation of energy as an increase in productivity utilizing a finite set of energy resources, and on that basis, an increase in productivity for a private or public sector organization results either in more profit or lower taxes with the same capital and personal resource base available.

So in this context, energy conservation really has to be viewed as an investment in the future value of society without sounding too high-falutin'. It's our view that the purchasers of conservation programs, whether they're public or private, really lack sufficient incentives at this particular point in time to employ energy conservation measures at a rate which is consistent with what the DOE and the national interest has in mind at the present time.

Our firm believes that private firms in partnership with state and the Federal DOE's can do much to speed up this conservation awareness. There's been a lot said in the hearing about the role of government in conservation. Daily, we in the private sector are exposed to ever increasing energy costs at a time when energy supplies are dwindling. Conservation is no longer a luxury, obviously, but rather a staple necessity for our very existence.

From a private perspective, we believe that the Federal/state conservation efforts have some short-comings, one of which is a lack of a central energy conservation strategy. Most aspects of the program, except possibly the weatherization assistance program and the solar information network, are not results focused. The program emphasis tends towards regulation and paperwork instead of problem solving.

We believe that a simple transfer of conservation activities to the states is not going to promote energy conservation. Why? Because we personally experience impediments at both the Federal and state levels with respect to implementation of a rational conservation program for both public and private clients, the public being local governments whom we deal with almost exclusively.

In the past, the Department of Energy has treated the conservation program almost as if it was a stepchild, and has been slow to formulate policies that are consistent with the overall mission of DOE. These problems, of course, have ameliorated in the past couple of years. However, the undertain funding and future of DOE has promoted a new round of skepticism among both private and public entities. Where are the programs going? In this hiatus, people are postponing decisions on conservation programs. This undesirable effect has significant national ramifications primarily in the ineffectively used energy resources.

As with any organization, direction must come from the top and pass through the organization. Inducements such as grants are slow to filter down from DOE, through state governments, to the client. As an example, one of our recent clients, a major hospital in our region, was approached to have an energy conservation engineering study done for them by our firm. Some 18 months elapsed before the study was undertaken. The hospital stated that money was probably (as it subsequently was) forthcoming from a DOE program to complete the study. The study fee was slightly more than $29,000 and when the study was completed, it identified first year savings of nearly $229,000 in energy costs, with implementation costs of slightly less than three quarters of a million dollars. Further, a few minor changes in their existing energy management system would have resulted in immediate energy savings which would have more than paid for the cost of the study in less than 5 months. But they waited, and in waiting, they suffered in terms of the expense, and so did the nation in a sense. The point of this simply is that the Federal and state programs offered impediments to exactly what we're trying to do and that's to conserve energy.

The states are slow to respond too, because they're not sure that their own initiatives are going to be in line with what the Federal government has in mind. They can only respond to the Federal mandate when the Federal folks understand what it is that they want. That often means that the state cannot effectively manage even their own programs, because they are not sure how they will interface with potential or proposed government programs.

The moral that I'd like to draw from these examples is that we believe a framework is necessary for conservation activities which involves not only the DOE and the state agencies, but has the input of private firms, not unlike Mr. Vosbeck with the AIA and with the Mechanical Contractors Association, etc. We believe that with those groups, participating in a partnership with the private sector, and with the proper incentives for energy conservation offered, can go a long way towards at least beginning to implement nationwide some of the programs.

We believe that there is little to be gained by shifting programs between governmental agencies (Federal and State). An increase in the involvement of local communities and private sector companies should be fostered because of the profit motive is a strong incentive to produce results in a competitive marketplace. Local governments are closest to the problem (need) and can work closely with private business to achieve energy conservation.

I have some very specific recommendations which I'll end with. They're divided into three different parts, the Federal, the state and the local governments. MICA believes that while education of public officials and private customers on the vast potential for conservation techniques can impact very significantly on their particular economic picture, they need the proper incentives to follow through with their programs.

In the private sector, such incentives might take the form of increased tax incentives and/or tax credits where applicable. In the public sector, such incentives might take the form of grants for good projects after implementation.

Specifically, steps the federal government should take include:

- Define the conservation program's goals and objectives.
- Provide dates for implementation of various facets of the program and then stick to them.
- Provide tax incentives for energy work - studies as well as equipment.
- Expand research and development funding (through direct grants) to private organizations and individuals.
- Allow for patents to be retained by investors under the appropriate technology programs.
- Provide for personnel transfers from public agencies.
- Convince the President and Congress to provide the necessary funding.
- In short, be consistent with the initially stated goals and policies.

State governments should take these initiatives:

- Tax incentives for energy conservation measures.
- Have State Clearinghouse for energy information - send to local governments.
- Establish community wide load shed blocks for block control of demand and usage.
- Establish community based energy task forces to assist in energy conservation measures.

Local governments, where we believe most of the initiatives should be taken, should take these initiatives:

- Establish energy offices at the local level.
- Offer property tax breaks for energy efficient structures.
- Remove code restrictions which impede conservation measures.
- Establish community programs which help in the area of information dissemination.

We also feel community-based energy task forces should be established where that's practical to assist in energy conservation measure definition for that particular community.

MICA is an example of a private sector firm, which from its founding, has addressed the question of energy conservation from an economic viewpoint. MICA, as a corporation, identifies productivity improvement ideas for clients (both public and private) in all sectors of the economy. One of the company's services, the TEMP Service (Total Energy Management Program) is offered to public and private clients including:

- ★ Communities
- ★ Office Building Owners
- ★ Condominiums
- ★ Nursing Homes
- ★ Motels
- ★ Industrial Plants
- ★ Housing Authorities
- ★ Private Colleges
- ★ Shopping Malls
- ★ Hospitals
- ★ Hotels

TEMP is a comprehensive energy conservation and cost reduction service which is results oriented, profit motivated. In the TEMP program, MICA uses a staff of professiional engineers to examine a prospect's facility through the use of a "walk-through" survey to identify what can be done to reduce energy consumption by identifying energy cost reduction potentials. Such potentials range from changes in the building envelope (insulation, insulating glass, etc.) to energy management systems to control electrical demand and consumption. Once potential corrective measures have been identified, MICA will propose to the client identify and describe corrective actions to be taken. Another alternative is for the client to sign a TEMP Service Agreement to install an energy conservation measure such as an energy management system. In the latter arrangement, MICA provides the client with a turn-key package for each energy conservation measure or for all of the measures grouped together. This package includes the necessary engineering design work, equipment, supplies, and installation labor. In short, MICA identifies, initially without charge, the client's energy problems and then provides a total solution for that identified problem.

MICA brings certain important attributes to this program:

- MICA's staff is comprised of registered professional engineers with specific experience and training in energy conservation.

- MICA does not manufacture, sell, or distribute any equipment. Thus, MICA is able to eliminate vendor bias which allows them to custom fit equipment to a particular client's needs.
- MICA provides the TEMP service on a turn-key basis.
- MICA guarantees to produce energy dollar savings in excess of the cost incurred for the implementation.
- MICA can arrange complete third party financing of the TEMP service packages.

The results oriented approach of MICA permits the client to see the results (to which everyone has contributed some portion of the effort). For private sector companies, the decreased energy costs from ECMs result in higher profits. For public sector clients, decreased energy costs result in lower taxes.

A well thought out and implemented energy conservation policy will significantly stimulate the goal of energy independence with the proper mix of private and governmental programs to aid the implementation.

In summary, we believe that there's little to be gained by shifting programs between various governmental agencies. We really honestly believe that there needs to be developed a very strong partnership between the Federal, state and local governments as well as consultants and that we take that and move with it and the existing programs of DOE into a more rational basis for conservation into the year 2000.

MR. ONDICH: Thank you. Next is Mr. John Harkins representing the Mechanical Contractors Association.

MR. HARKINS: Good afternoon, Mr. Chairman and members of the panel. The Mechanical Contractors Association, known as MCAA, appreciates this opportunity to comment regarding the national energy policy.

I'm John Harkins, a mechanical contractor from Lansdowne, Pennsylvania. I'm also the Chairman of the National Energy Committee for MCAA as well as a director on the national board.

MCAA is a construction trade association of about 1700 firms, employing approximately 180,000 persons. Our members build systems that move fluids, both liquid and gas. This includes the fabrication and installation of heating, ventilating, air conditioning, plumbing and process piping systems, and further encompasses service, maintenance and the testing, adjusting and balancing of these systems. Our work affects multi-residential, commercial, public and industrial facilities.

The equipment MCAA members install is the principal user of energy in buildings, and energy is the key to our industry. Consequently, we are deeply concerned about conservation and the effective use of our nation's fuel resources.

Although the United States has begun to improve our energy position since the Oil Embargo of 1973, this nation still faces serious problems in our energy supply and demand. MCAA has had an Energy Committee even before the OPEC embargo. This Committee has worked to educate our members on the nation's energy problems and what they can do to promote energy conservation. We have done this through such measures as newsletters, bulletins, reports and a series of educational seminars and workshops. MCAA also participates in the standards developments process and inter-association and government activities related to energy. We believe firmly that the resolution of our energy problems requires a governmental and industry teamwork approach.

The present policy of the Reagan Administration to reduce government intervention in the energy area and encourage the free enterprise sector to develop sources of energy is commendable. There is no single answer to our energy problems. It is still necessary for the Federal government to take action in certain areas. Our energy problems can only be solved through a broad undertaking -- by working in many directions at once -- on a planned and phased basis.

The opportunities in both the public and private sector in the energy field are enormous, and many businesses are seizing them. However, to be effective the national energy effort must be focused, guided and well-coordinated.

As an association, MCAA has developed recommendations for a comprehensive national energy policy, which is enclosed with our written statement. (This report was reviewed, but not included in the Transcript due to its length). In the interest of time I will not cover the entire plan, but comment on one facet that we consider essential to any practical energy program -- and that is energy conservation.

CONSERVATION

Conservation of energy in residential, commercial and industrial buildings, in appliances and in transportation is the most promising immediate, relatively untapped source of energy. It is the cheapest, most environmentally safe and most productive method of increasing our nation's energy supply. Significant conservation can take place in the transportation sector, but it is in the buildings that the most savings can be made.

Estimates show that our energy usage could be cut between

30 and 50 percent through effective conservation measures in buildings with little or no change in comfort. Existing commercial and industrial buildings can be retrofitted (renovated) to be much more energy-efficient. These savings can amount to a reduction of more than 3 million equivalent barrels of oil per day. In addition, energy conservation can reduce energy costs to consumers considerably.

The commercial building sector alone uses approximately 16 percent of the nation's total energy consumption. Our nation has an inventory of 24 billion feet of floor space in commercial, institutional and other buildings, many of which have been overheated in winter, overcooled in summer, and overventilated and lighted year round. Experts agree that these buildings, on the average, waste between 40 and 50 percent of the energy consumed. Therefore the savings can be substantial.

In addition, conservation means immediate savings in energy. Much of the engineering knowledge and technology for making existing buildings more energy efficient currently is available.

Conservation is not just a matter of installing more insulation and double glazing windows. There are other important areas involved, such as the efficiency of heating and cooling equipment, proper temperature control equipment, and more efficiency of heating and cooling equipment, proper temperature control equipment and more efficient means of lighting.

A major problem is to convince building owners to accomplish energy conservation. In this vein, MCAA seminars in recent years have stressed procedures and techniques to assist our members to market energy conservation work. The practical experience of our members is that building owners need to be assured an adequate economic return on their investment -- or a payback within 2-3 years. In some cases the necessary payback is possible and can be shown through proper engineering calculations, but in many cases even the present prices of energy are not sufficient inducements.

This industry has been dismayed by the current shortage of accumulated capital by manufacturing companies and real estate investors. Of monies which are available for capital investment, particularly in the industrial sector, large amounts are being allocated to meet stringent requirements for air and water pollution control. Although practical standards are necessary from a social view, expenditures for impractical standards do not contribute in a real sense to growth of industrial capacity, which in turn, produces more goods and jobs.

We heartily agree with the Reagan Administration's actions in reviewing existing standards and legislation and strongly endorse Administration efforts to reduce or repeal those that are impractical and unrealistic. The barriers to conservation are therefore not technical but economic, social and political. To overcome these barriers, we need a strong government policy that advocates and fosters conservation.

RECOMMENDATIONS ON RETROFIT APPLICATIONS

Retrofit Applications. To assure that immediate steps are taken to conserve energy in existing buildings and that the necessary monetary incentive for owners is available we recommend the following:

1. Residential Energy Conservation. The incentives provided homeowners under the National Energy Act should be expanded. They should preferably include reimbursements or tax credits up to 50 percent of retrofit costs (with rebates for lower income groups) to install energy conservation improvements.

2. Commercial and Industrial Property, Energy Conservation Program. Because of the diversity and the extent of energy that can be saved in the commercial and industrial sectors, we strongly recommend that incentives under the National Energy Act be expanded to incorporate:

   a. Tax credits of 40 percent of retrofit costs.

   b. Low interest loans to owners, builders, and developers of commercial property and industries for energy conserving measures in new as well as existing buildings.

   c. Loans to owners, builders or developers for engineering studies to determine the cost-effectiveness of proposed energy-saving changes in buildings and systems of commercial and industrial establishments.

   d. A system of rebates for each barrel of oil or the equivalent in natural gas or electricity saved in commercial and industrial establishments through retrofit and other conservation measures.

The measures outlined above are covered in more detail in the MCAA "Recommendations for a National Energy Policy" enclosed for the record with this statement. They will significantly improve our nation's energy posture. The great advantages of this plan are that:

> It encourages conservation of energy in a manner that can be quickly instituted and will produce an almost immediate payoff in fuel saved.
>
> It relies heavily on public encouragement of and cooperation with private industry; and

It encourages the private sector to become deeply involved.

MCAA considers these governmental incentives to be short range, transitional actions. In the long range, rising costs of energy will bring economic forces into full play and people will conserve energy because of its high price alone. Even now the nation is consuming energy at a lower rate than 3-4 years ago. Temporary governmental incentives will accelerate the process until the market place can take over completely.

EDUCATING THE PUBLIC AND GARNERING SUPPORT

A primary and perhaps the most important step in resolving our national energy problem is to convince the American public that a national energy problem does, in fact, exist, that it is serious, and that they are the key element of the solution.

A major national public relations should be initiated to educate the public on the energy problem and its solutions. It should be dynamic, sustained, imaginative and a central part of any national effort. The educational program is a task for both the government and private sector working in concert.

CONCLUSION

This nation can delay no longer in squarely facing our extensive energy problems. We must recognize that each single solution is needed and has its place. However, we should determine the most promising, practical approaches and concentrate on accomplishing them rapidly and effectively. The nation can and must reach a consensus by bringing all factions and single answers into a cohesive, multifaceted and long-range plan. Only a determined approach will overcome the problems facing us, make us energy self-sufficient and able to continue our strong role as a world power.

MCAA recognizes that this program calls for government involvement, including financial incentives at a time when the Administration and the country are calling for less government, less federal spending and no inflation. MCAA strongly endorses those worthy objectives and believes that our proposals in the long run will aid in their achievement through increased employment, decreased balance of payments and reduced dependence on foreign oil.

Thank you for this opportunity to comment. I will be pleased to respond to any questions.

MR. ONDICH: Thank you Mr. Harkins. I would like to start out with a question of Mr. Rimer. We heard this morning from the Thermal Insulation Manufacturers Association, some distressing information. They did a survey of 500 industrial firms to determine the level of insulation use. What they learned was that these 500 plants were not insulating as you might expect with rising energy prices.

In your experience have you found the same results and is there any reason to believe a residential survey would be significantly different?

MR. RIMER: We don't do work in the residential area. We do in the industrial area. We do in residential as it relates to doing block control in smaller communities, but the residential work is not as it would be for small air conditioning systems.

In the industrial plants, we do do a lot of work, and the problem, I think, has been faced very squarely by Mr. Harkins and by the testimony this morning. The incentives these industries think they need are either tax incentives, some form of tax incentive, a tax credit or some other means to get that payback down in the two to three year period which we're finding most of these people need.

Insulation sometimes takes anywhere from two to five years to pay back depending on the installation.

MR. ONDICH: I believe they were talking about 30 months.

MR. RIMER: Well, that's kind of in the midband there. We've found some that have extended as long as five years, some that are two years. These people need something that will pay that back more quickly. A credit could, of course, accommodate that.

MR. ONDICH: So you do not think the rise in prices is sufficient?

MR. RIMER: Not now, very definitely not. We're working with Duke Power in their service area in the conservation effort with a number of plants, and Duke's a very efficient utility. It has fairly low rates, but the industries in that area are very, very hesitant. Their capital resources are very, very thin right now. They need to spend it to upgrade their product lines in order to become more competitive at the product level. So retrofitting their HVAC system or insulating steam lines, it's a very low priority, in spite of the fact that that energy cost is really affecting that bottom line.

They need to get it down below a two-year payback in order to feel comfortable. Apartment owners are worse, a year to a year and a half for them, and that's across the board. In New York City, in particular, we're finding they don't want to do anything unless it will pay back in 12 to 18 months; there's no interest.

MR. ONDICH: I would like to move to Mr. Harkins for a second question. Since you are a national organization, do you see any regional areas, the Northeast or the mid-atlantic states where some of these industrial firms may be picking up conservation measures because they are more directly affected by fuel prices than in other parts of the country.

MR. HARKINS: Well, the industrial section is picking up much more rapidly than the commercial section, and as for regions that it would be picking up in, it would be basically climatal effect as I know it. The Sun Belt wouldn't be as influenced, and sure, the incentive would not be there as greatly as it would be up in the Northeast section in the case of insulation or heat loss, that type of thing.

MR. MILLHONE: I have a question that occurred to me sort of combining input from both of the witnesses. One was the comment by Mr. Rimer about the audit that cost $29,000, if I remember correctly, with a four-month payback and management savings that would, in terms of just the operation and maintenance, that would pay for itself fairly quickly and then provide additional savings from the retrofit. I think that we are all familiar with similar instances, maybe some not as dramatic as that.

The other point that was made is that the hope of some sort of Federal incentive might cause people to forego action waiting for the Federal financial incentives to be sweetened. This might cause the hesitancy of building owners or industrial plant owners to take actions that already would provide fairly significant savings.

The questions that occur, I think, to anyone hearing this is why isn't more retrofit occurring immediately with this kind of potential, and, secondly, is there a counterproductive effect of discussing enriched Federal financial incentives in leading people to forego things that they ought to be doing right now based on the present financial incentives?

If either or both of you would like to comment on that.

MR. RIMER: Do you want to start?

MR. HARKINS: Okay. I hope I don't take up all the time. Well, I'll let Mr. Rimer address the counterproductive thing, because he experienced it. We have experienced it too, and we're aware of his sample.

As we find the marketplace in the commercial side, the ability to pass through the cost leaves no incentive for the commercial owner of real estate to upgrade this system. With investors on the industrial side, everybody is profit-oriented, and you must turn a profit, or who cares about three years from now. If we don't make a profit in the corporate structure, we don't move up, or our corporation doesn't have earnings, etc., etc.

So the guys who really get the attention are the fellows who can produce the widget by taking funds from the corporation and making the widget go out the door properly. Many times they have tax incentives themselves, equipment, building, depreciation incentives. Here we have a segment of the industry which we are identifying as an industry in its own right, and it has very little incentive to compete with the already existing incentives that are known and have been proven.

There is also in the eye of the spender a hesitancy to believe. He asked for a two-year payback which is 50 percent return on his investment, a three years payback, a 35 percent return on his investment. When he's assured that it will happen, he really may not even believe that too. It'll go back to the other area where he can make his investment and he knows that he can get his profit out of that whereas this is a relatively new thing within less than 10 years, and he's saying, well, give me a greater tax incentive or give me something more, or I'll put my money where I know it's safe, because I'll be in business two or three years from now with this thing. If it goes wrong, I may not be here, that sort of thing.

That's how I can answer that, and I reserve the other answer for Mr. Rimer.

MR. RIMER: I think the question is very perceptive, and the view that you can give of taking energy and energy savings or conservation in industry and trying to convince that person that it's a good idea is to say that you're really adding on another foot to the industry. You're giving them another two feet of production line, because you're really giving them additional money to either make more widgets and make more money or you're actually bringing something to the bottom line.

In the school program and in the hospital program and local government program which we're familiar with as well as the industrial program, I think we found many of the clients that we've served absolutely unwilling to take the government money. They want to move ahead. They are convinced that there is no advantage to them in taking a small grant and then filing all the paperwork when they can go out and do the study and implement much more quickly.

I think part of that is not really the government's fault. I don't think it's anybody's fault. It's just a matter of the program getting started and having all of those initial impediments that created the problems in the program.

Here we are, we finally got a program set up that appears to have at least some general, forward-moving direction, and we're going to undercut it. I'm all for reducing the Federal budget too, but I think we have to look very carefully at the potential national interests that are being lost here, and that's why I say I think it's a very good question. I don't know a real answer to it.

I don't know where the incentive picture lies here. I think it's a question that this whole hearing in many peripheral ways has addressed. Everybody said we needed incentives, but what are they? How do we best fit that in with Reagan's economic programs which I think are sound and are going to demonstrate their validity in time, that we need those incentives now.

MR. MILLHONE: Just a couple of what I hope will be quick questions and answers. Mr. Harkins, does the Mechanical Contractors Association of America undertake any research activity for more efficient HVAC equipment?

MR. HARKINS: Well, we do so through contributions to ASHRAE per se as a technical society. We do not propose ourselves to be technical people and develop standards in that aspect.

MR. MILLHONE: Mr. Rimer, you mentioned the desirability of their being local, state and Federal energy programs. Do you think it should be the Federal government's responsibility to pay the cost of the state and local programs or should those governments pay the cost of their own program?

MR. RIMER: I think the government should pay the cost of their own programs to the extent that they can and maintain a national program. If that means that a certain amount of seed money has to come from the Federal government, I think that should be provided to the extent possible. But I think the local and state governments should do as much as they can themselves and many states have. But we hear all of the states saying, oh, we're going to go out of business if you don't give us the money. So there may be some seed money necessary to keep them going.

MR. MILLHONE: From your perspective, I guess, in North Carolina, how have you seen the program over the last few years?

MR. RIMER: I think locally it's become somewhat stronger, because North Carolina, South Carolina, to some extent, Virginia, have forced the local communities to do a little bit more than I know some of the northern states have, so that the local program has gotten strong because of workshops and the like.

The state program itself is relatively weak if the DOE takes the money out of it, because the state has not taken as much initiative as they should to provide state funding. They will. Our legislature is looking this fall to do something about it if, in fact, funds are cut off, because they recognize the importance of it.

MR. ONDICH: As an observation, we had Dr. Kline, a City Councilman from Spartanburg, South Carolina, state that his community did not seek Federal assistance. They had an adequate tax base, supported by the industries that are relocating in that general area.

MR. RIMER: That's great for the Southeast, and I'd love to be from there. I was born and raised in the Northeast, and we have a real problem up there. Energy costs are two to three times as high. It's a real problem.

MR. ONDICH: Okay. Again thank you, and I would like to move on to the next three witnesses, Carol Allen, from the New Jersey Community Action Program, Bill Chandler from the Environmental Policy Center and Katherine Ellett from the League of Women Voters.

Since we have significantly changed our scheduling, I would like to try to get back closer to that schedule and start with Carol Allen from the New Jersey Community Action Program.

MS. ALLEN: I work for the Community Action Program's Executive Director's Association of New Jersey, a research and information statewide office for 23 Community Action Agencies in the State of New Jersey.

Community Action Agencies are the deliverers of Federal and other anti-poverty programs in local communities. The Community Action Agencies are the local deliverers of the low income weatherization program which was started by the U. S. Community Service Administration, and later, when expanded, became the DOE program, but in many, many cases Community Action Agencies have continued to be the deliverers of the program.

I am first and foremost an advocate of that program as a Federal program, and, secondly, an advocate of energy conservation as a national effort.

Energy conservation is a national need. The Federal energy legislation of the past five years was created deliberately as a national response to the energy crisis. Programs such as Low Income Weatherization, the Schools and Hospitals Program, Residential Conservation Service and Energy Extension Service should be funded by Congress.

State and local government programs are also important, but they are only supplements to a big national priority enabling efficient energy use.

If our representatives in Washington look at the national energy picture from the point of view of individual households or small businesses or institutions such as schools and hospitals, the burden of escalating energy prices in the past 10 years has been overwhelming. Before the 1970's, building design, location and energy use was based upon false assumptions about the availability of abundant oil, electricity and natural gas at affordable prices. There is no need to reiterate what happened to energy prices after 1973. Consumer and business demand continuing at unchanged levels contributed to the price increases. Since energy is a necessity, it is price inelastic in the short run; price inelastic means that demand does not decrease rapidly despite price increases.

The immediate need was for mobilization of information and planning to sensibly reduce energy consumption. Federal legislation from 1975 to 1978 set into motion appropriate Federal government leadership with the authorization of national energy conservation programs.

Research shows that the weatherization of homes in the form of storm doors, windows, insulation, caulking and so forth results in substantial savings in energy consumption. A study by U. S. Community Services Administration and the National Bureau of Standards shows that just over $1000 per dwelling in weatherization costs can result in a 39 percent reduction in fuel bills.

The DOE low-income weatherization program helps people who lack the capital or the borrowing power to make energy saving improvements. I would like to commend for the record information already presented in this series of hearings, the Consumer Energy Council's extensive research. They gave testimony yesterday and also presented a very thick volume of research which has been read into the record. I commend also the DOE Fuel Oil Marketing Subcommittee research which was read into this record yesterday. Those both document the need for and the consequences of low income energy conservation assistance.

Income eligibility in the weatherization programs is based upon 125 percent of poverty income guidelines. That means people who couldn't really afford any kind of real capital expenditure. The same people are eligible for financial assistance in paying their fuel bills; therefore, it makes sense to provide a more lasting solution to fuel bill problems by making houses more energy efficient.

There are also those elderly people with different spending habits who will deprive themselves of adequate heat at today's energy prices. So weatherproofing their dwellings enables them to live in a more comfortable and healthy environment. Low income weatherization programs have been in effect for a few years, but there are still 13 million low-income residences that need to be weatherized.

The need for weatherization is specific and enormous. It should be maintained as a specific Federal program with direct funding and guidelines. It has taken a while to arrive at the right program design, and it would be impossible for 50 states to assess needs and implement weatherization at the scale needed by the 14 million low income elderly and handicapped households in this country.

The idea that low-income energy assistance programs should be discouraged as Federal energy policy because they're income transfer programs is very poor logic in my opinion.

The income transfer has already been set in motion with the rising energy prices. The transfer is from consumers to corporations. It affects poor people in a very regressive way, because they pay a higher percent of their total income for energy.

Home energy consumption is not discretionary spending. The only way poor people can consume fewer thermal units of energy is by using it more efficiently. It is too important to leave to states. Weatherization started as a Federal program and needs to remain there.

Senator Cohen of Maine, when he introduced a low-income weatherization act to the U. S. Senate, quoted a study by Urban Systems Research and Engineering in Cambridge, Massachusetts, where they confirmed that actual energy savings of 16 to 35 percent were resulting from DOE's weatherization assistance. He saw it in terms of the actual saving of energy, that one million homes already weatherized represented saving of five million barrels of oil a year.

If we take a price of $36 a barrel, this could represent a savings of up to $185 million, and this has, of course, a positive impact on U. S. balance of payments deficit problems, and the problems of the strength of the dollar, and it reduces our dependence on foreign oil.

He's just talking here about low-income weatherization. This does not take into account all the middle-income people who may, through other kinds of incentives, choose to conserve through their own investments. If we were to weatherize all low income homes in need within the next 10 years, the projected energy savings would be 339 million barrels of oil a year, about 16 percent of the oil we currently import. If the price of a barrel of oil were to remain constant at today's world price of $36 a barrel, this would represent a savings of over $12 billion, and one can assume that the price of oil will exceed today's price. So the savings will be even greater.

Clearly it is in our nation's best interest to reduce energy consumption. This morning I attended hearings where Senator Weicker, whose proposed bill S1166 is a weatherization and state and local energy conservation block grant bill, heard various testimonies. Senator Weicker's proposal is that 65 percent of state and local energy conservation money be allocated to low income weatherization for the next fiscal year.

His comment was that is is not really government spending, but it is government investment to invest in energy conservation of poor people's houses.

MR. ONDICH: Thank you, Ms. Allen. We'll come back with questions after we hear from the other witnesses. Next is Bill Chandler from the Environmental Policy Center.

MR. CHANDLER: Thank you very much. My name is William Chandler, and I represent the Environmental Policy Center. My comments today reflect nine years of experience in energy conservation research, including work I did in co-authoring the book ENERGY: The Conservation Revolution. I have also served as a consultant to the Congressional Office of Technology Assessment on a review of the Department of Energy's conservation programs.

Since the Environmental Protection Agency's mandate requires that it address the broad question which is, "Is enough attention being paid to energy conservation?" I'll begin with this assertion, that our policies for achieving energy conservation are terribly inadequate.

The Reagan Administration's recent efforts in this regard are, moreover, counterproductive, and I will refer to these shortcomings as I describe examples of policies that I believe are necessary to fully capture our energy conservation opportunities.

I'd like to begin with the first example of automobile fuel economy. Automobile fuel economy may be the single most important energy conservation measure available to us. The truth of this is evident in that the quantity of gasoline that we consume almost exactly equals the quantity of oil that we import. Since most gasoline is consumed in private cars and since the efficiency of cars can be improved from the 15 miles per gallon that the fleet on the road today averages to 50, even 60 miles per gallon, it is clear then that gasoline consumption in cars should be our first priority. Indeed, the difference in the year 2000 between oil savings that the market is likely to effect and that which is both technically and economically feasible is probably equal to about two million barrels of oil per day.

The Reagan Administration asserts that the deregulation of oil prices will bring about all the gasoline conservation that is warranted, that is that the market will take care of the problem. Figure 1 which I have attached to my testimony indicates why this probably won't be the case. (see Figure 1)

The figure shows how if a driver of a car that obtains 15 miles per gallon can save 5 cents per mile by trading in his car that gets 15 for a car that gets 25 miles per gallon, then the savings, as I said equals about 5 cents per mile.

The savings decreases, however, if you go from say 25 miles per gallon to 50 miles per gallon to the point where you're saving 1 to 2 cents per vehicle mile. This is not enough of an incentive, in my opinion, to overcome the consumer's reluctance to pay a higher first cost for the car even though the consumer would save money over the life cycle of that investment, that is over the first three years of the life of that car. That's because consumers in general avoid higher first costs even when to do so costs them money over the life cycle of the product they purchase.

This is a problem in all areas of energy conservation, except perhaps in industry. This problem may explain why Europeans who have for years been paying prices of $2 to $3 per gallon of gasoline drive cars that average only about 25 miles per gallon.

It's ironic then that one of the first actions that the Reagan Administration took when entering office was to put up barriers to the importation of fuel efficient cars. The export restrictions forced upon the Japanese will drive up the cost of the average fuel efficient auto for sale in the United States by about $300 per car.

This cost incidentally will be equal to the fuel savings of buying that car that would accrue over the first year of use of the car. So the Reagan Administration not only is not paying enough attention to energy conservation, it's making conservation harder to achieve.

The second example turns to industrial energy conservation. It is often supposed that industry will capture, in response to the potential for cost savings, all the opportunities for

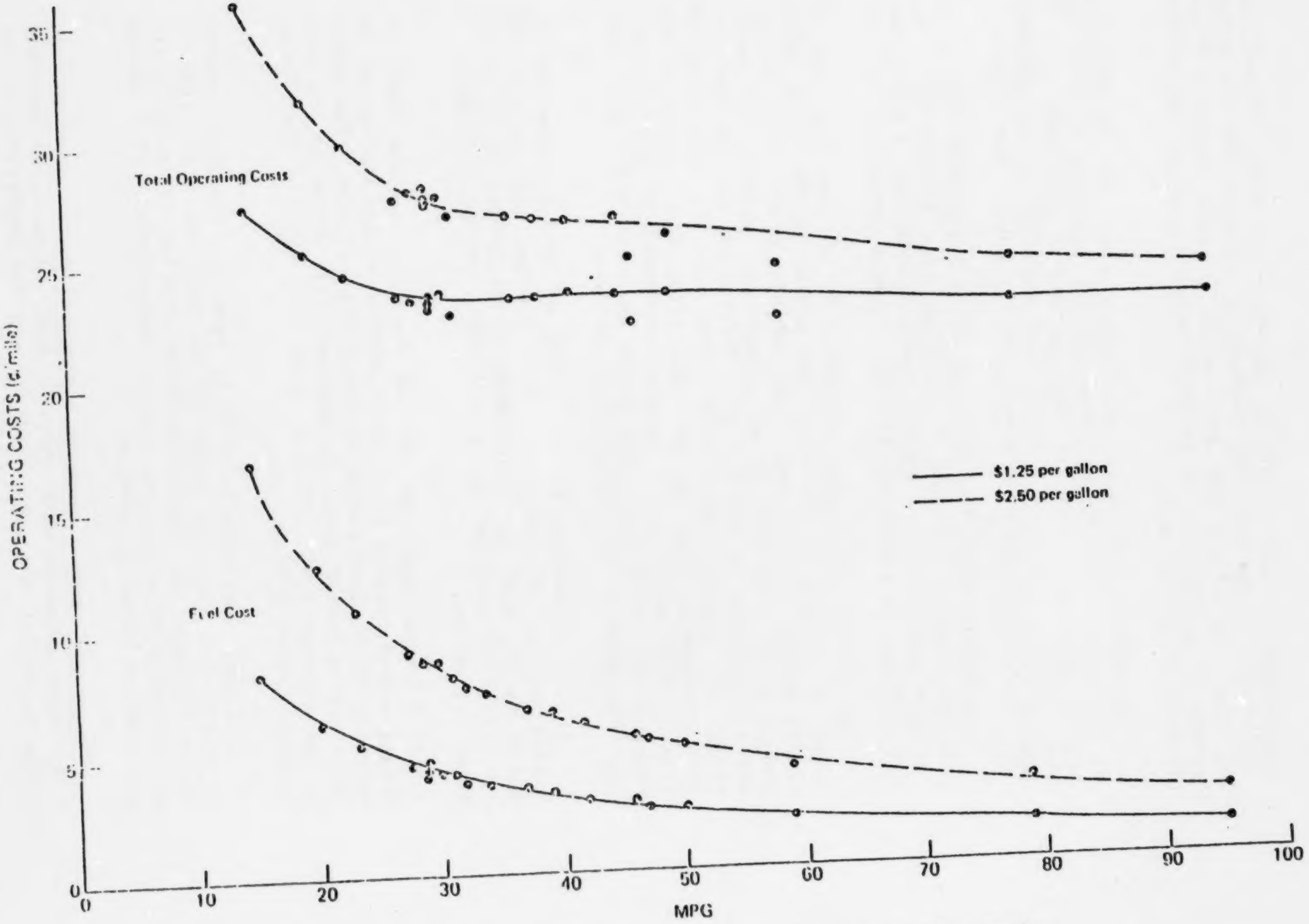


FIGURE 1: Automobile Fuel Economy vs. Total Operating Costs

energy conservation that are both technically and economically feasible. I believe that this supposition is incorrect.

Most industrial plants were built when energy cost the equivalent of about $5 per barrel, and so that makes most U.S. industry obsolete with respect to today's energy prices with respect to the energy conservation potential that the price increases of the 1970's have dictated.

In fact, a recent study by the Environmental Policy Institute has estimated that the need to increase investment in industry for energy conservation alone amounts to something like $20 billion per year. Industry is not making these investments because of the high cost of capital, particularly to those manufacturing industries that have very large debts.

A number of senators, including Senator Malcolm Wallop, have offered a bill which would help solve this problem. It would make part of the needed capital available through an investment tax credit of 20 percent for investments in energy efficiency in industry.

Since the investment tax credit gives the best "bang for the buck," as it were, or in other words, the greatest amount of private investment per dollar of Federal revenue lost, this bill could have a most beneficial effect; but the Reagan Administration has not supported this legislation. This aspect of Reagan policy further exemplifies the Administration's inconsistency on matters of market interference.

Instead, the Reagan Administration's economic recovery plan will only make matters worse. It will allocate vast sums of money to electric utilities and oil refiners, thus providing even greater subsidies for energy consumption.

My last example is in the buildings sector, and it refers to the glaring error made by the Reagan Administration and its ill-advised attempt to repeal authority for about a dozen energy conservation programs, including Low Income Weatherization, Appliance Energy Standards, the Energy Extension Services, the Residential Conservation Service, and others.

These programs were specifically designed to fill the gap left by the marketplace in providing reliable information, technical assistance and financing for energy conservation. Fortunately, these programs probably will not be repealed, but that is not to say that they will be supported adequately.

Table 1, (see attached) also attached to my testimony, shows the distressing fact that the present level of funding for low income weatherization would require an unbelievable 40 years to weatherize even at a modest level the homes of America's

Table 1: Low Income Weatherization

LOW INCOME HOME WEATHERIZATION

The Need
16 Million Low Income Homes X $500 per Home = $8 Billion

The Federal Response
Weatherization Program = $200 Million per Year

The Result
$8 Billion ÷ $200 Million per Year = 40 Years

neediest. The Reagan Administration, unbelievably in my opinion, would devastate the weatherization program.

Another program for which Reagan sought repeal is the Appliance Efficiency Standards. Appliances can be made much more efficient than the market now demands. Figure 2 shows the efficiency of a typical refrigerator relaive to its cost. One can see from this chart that small increases in the purchase price of refrigerators can greatly increase their efficiency. The problem, again, is that the consumer reacts more to first costs than to life-cycle costs. Moreover, the consumer does not even pay the marginal cost of electricity; he or she pays the average cost. The consumer does not "see" correct price signals, a situation that makes it impossible for the market to work adequately. This fact is the major justification for appliance efficiency standards: standards will, quite simply, save both consumers and society lots of money.

In summary, I have cited a few critical examples of how the Administration has paid far too little attention to energy conservation. There are, of course, many others.

The fault lies not just in the leadership in the Department of Energy, but throughout the administrative agencies. The Office of Technology Assessment has urged that Congress provide DOE with an era of stability in order to implement the energy conservation programs for which DOE does have responsibility. This, I believe, is a sound recommendation.

But the actions of each agency impinge upon energy consumption; therefore, each agency should review its proposed actions for their impacts on conservation and without such attention, fiascos such as that represented by the automobile import restrictions inevitably will be repeated.

Thank you.

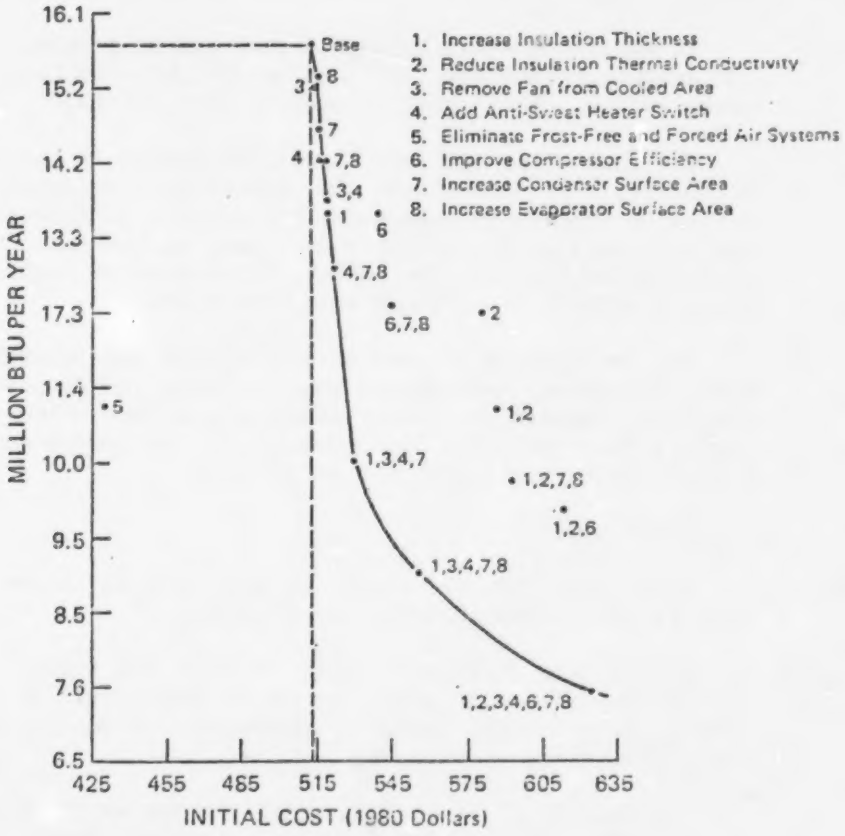
MR. ONDICH: Thank you, Mr. Chandler. We will move on to our last witness in this segment, Katherine Ellett.

MS. ELLETT: Thank you. My name is Kathy Ellett, and today I'm representing the League of Women Voters of Maryland. We have about 3000 members in the State of Maryland. I am the First Vice Chairman and Energy Director.

The League of Women Voters of the United States has been involved in energy issues at all levels, local, state and national, since 1974. We began our energy concerns at that time with the rather obvious need for something to be done about energy, and our first concern was for conservation.

We have always looked at conservation of any resource in a

FIGURE 2: The Refrigerator: Efficiency vs. First Cost



very positive sense. Don't waste it, use it efficiently. It doesn't have to be a negative. We know, everyone knows that we are terribly wasteful with energy in this country. We can be more efficient without changing our standard of living or giving up things.

The League of Women Voters of the United States testified before the House and Senate Budget Committee on their revised 1982 budget. I have included their statement on solar and conservation programs in my testimony, my written testimony, because they could not send a witness today.

Our concern is for the drastic cuts that have been recommended in the solar/conservation budgets. We simply do not feel that market forces are going to take care of all these things. Higher prices already have had a beneficial effect, but they cannot carry the burden alone.

Most of the technical reasons why this is true have already been discussed. Either I've already heard them this afternoon, or reference has been made to them, but they have been brought up in these hearings.

So I would like to spend the time addressing myself to experience in the State of Maryland. Maryland has an energy office. It was organized in 1973 in response to an emergency situation. A good bit of its funding has been from the Federal government but not all of it.

I have been to many hearings at the state level during the General Assembly sessions. The legislators are very concerned about energy conservation and doing something about the crisis in general. However, they have a very serious problem of cuts across the board.

They are directly responsible to their constituents, and their constituents can get at them very readily and very easily. I don't think it's likely that they can replace all of these programs immediately. So to take them away from the states immediately poses severe problems. We in the League have had a lot of pass-through grants. They've been for very small amounts of money.

A lot of other voluntary organizations have received money also. We have done various public education type things with this money. It has been well spent, and I have included with my remarks some examples of the publications that we've put out. We don't think that loss of that kind of money will be a big tragedy. Public education is something the league has been doing for 60 years, and we will continue to do it without any Federal money.

There are certain things, however, that the Maryland Energy Office has done and needs to continue to do that it really can't do effectively without help from the Federal government.

I think all the programs that are in place are important and worthy of Federal involvement, but the three I'm going to mention are ones that the Maryland Energy Office feels they cannot carry out without Federal involvement. First is the ability to provide technical information to all sorts of small businesses and industries. A state the size of Maryland with some 4 million in population doesn't have the resources to pick up on this kind of technical information, let alone dispense it, so that there needs to be some kind of information transfer bank.

This has just barely gotten started, as I understand it in DOE, and it's beginning to function well. It doesn't make sense for every single state to do all the research and all the information gathering and buy big computers and so on to get in touch. That still cuts them off from what people are doing all over the rest of the country.

This is properly a Federal function, a clearinghouse, somewhere to get information and a way you can give your information so other people can get ahold of it, and, lastly, the ability to provide energy audits and advice to local governments. Again, it's helpful to have some kind of support. For instance, the Residential Conservation Service (the Federal mandate that it has to be done) is something industry won't do unless they're absolutely required to do it.

I mention that the state is under severe fiscal restraints, and, therefore, they cannot really pick up on this stuff immediately. A certain amount of it, I think, Maryland will replace, but obviously with a three-month legislative session, they're not going to do it overnight, and there are a lot of other things they're going to have to address first.

I would like to close then with some particular things that we think is the Federal government's responsibility.

First, it should establish and work towards specific goals for energy conservation. Someone earlier mentioned the lack of any kind of direction or priority setting. We have had this at the state level with the state conservation plan. Everybody then knows they're supposed to get 15 percent by the first year or whatever, and this is helpful, because then they can set out and say, okay, this is the way we're going to reach that goal, and the public knows that that's the way it's being reached, and they're more likely to cooperate.

Second, the Federal government should be encouraged in carrying out and doing or encouraging research on more efficient ways to use energy, as well as the evaluation of the conservation techniques. Again, each state should not have to do this for themselves. It doesn't make good sense. Each state shouldn't do the research on how well a house can be insulated or how these programs can be evaluated. There is a concern about indoor air quality. Every state shouldn't have to do research on that.

Establish and maintain an information transfer system. I mentioned that earlier. Assess and work to remove the many institutional barriers to the attainment of maximum conservation efforts. Again, this is something that has to happen throughout the whole country because all the components that go in in the building industry are not made in each state. They may be made in any state, and they're marketed throughout the whole country, something that has to be coordinated at the Federal level.

Five, continue the energy assistance programs. This is very important. It has to be done, and, again, the trade-off has to be there. If people's homes are not weatherized at all, then their energy costs will simply go up and up and up, and we know we have to help them pay those costs for health's sake. Every citizen is entitled to a decent standard of living.

My last remark the League feels very strongly about, treat all energy sources equally. The Federal government should either remove all subsidies for conventional energy supplies, including nuclear energy, or distribute, which is what we would prefer, what subsidies are allowed evenly across the board, and conservation should get an equal share to any other domestic source.

We believe that strong national leadership is essential to any effort in conservation and solar. If the nation's leaders act as though conservation were not important or convey the idea that it is not necessary, the public will act accordingly, and we believe that this will have severe consequences for our economic health and for our national security.

Thank you.

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FOLLOWING IS MS. ELLETT's WRITTEN STATEMENT:

July 15, 1981

The League of Women Voters has been involved in energy issues at local, state, and national levels since 1974. Our first, and continuing, concern has been for increased public awareness of the advantages of using any energy source in the most efficient way possible. Thus we have emphasized conservation--not in a negative way but as a rational solution to immediate energy needs.

The League of Woman Voters of the United States included the following statement in their testimony to the Senate and House Budget Committees on the revised 1982 budget:

> "We are dismayed at the drastic cuts in both the solar and conservation budgets. We oppose the Administration plan to slash over 77% from conservation and more than 62% from solar. The Solar and Conservation Bank should not be strangled just eight months after its birth.
>
> The Administration cuts are proposed on the assumption that higher energy costs and tax incentives alone will take care of energy conservation and encourage the use of solar. Of course, higher prices will have, indeed already have had, a significant effect; and for that reason we supported graduate decontrol of the price of oil and new natural gas. But higher prices will not provide capital to the vast number of individuals and business who can use conservation and solar. Higher prices and tax incentives will not enable tenants to control the design and operation of the residences and office buildings they occupy and whose energy operating costs they pay. Higher prices will not ensure that we achieve the maximum cost effective improvements in efficiency, even though such improvements are clearly in the national interest.
>
> In sum, we believe that federally funded conservation and solar programs are needed to expedite "market forces." They provide the diversity of approaches needed to help break down institutional barriers to use of these resource. The Bank, for instance, was designed specifically to assist those who would not be expected to benefit from tax credits. These programs can assist citizens in the large number of small applications of solar and conservation technologies.
>
> Ignoring all recent major energy studies and without new analysis, the Administration axes the Solar and Conservation Bank, building and appliance standards, utility audit programs, funds for state energy offices, and public outreach programs. Crippling reductions for local school and hospital conservation programs are proposed."

The Maryland Energy Office (MEO) has been very effective in organizing and promoting energy conservation throughout the state. They have been a ready soucre of information, both technical and general, to local governments, business and industries, volunteer organizations, public interest groups and private citizens. Maryland has a good State Energy Conservation Plan and we feel the State has so far met the annual goals that are established by this plan. There has been demonstrable growth in conserving activities and use of passive and active solar energy in Maryland.

The League of Women Voters of Maryland has been the recipient of grants to carry out several projects promoting energy conservation and educating the public. Specifically:

* We published a fact sheet entitled "Energy Conservation... It's Good Business" which documented the response of state business and industry to the increased price of energy following the 1973 crisis.

* In 1978-79 we reviewed local government programs and activities relating to energy conservation in order to increase the awareness of local officials, county government employees and the general public.

* In 1980-81 we focused our review on a survey of local energy coordinators, other selected officials responsible for energy conservation outreach and assistance programs, selected school officials and teachers. Information obtained in these interviews was made public in a variety of ways including publications, reports, forums, meetings with elected officials, newspaper articles and radio talk shows.

* We cosponsored a Solar Homes Tour which was attended by some 12,000 people statewide.

These programs and activities would not have been possible on a statewide basis without the support necessary to fund printing, promoting, publicity, etc.

If the Administration's proposed cuts are approved by Congress, the Maryland Energy Office will be severely affected. It would probably be reduced to a few people who would know what to do in an emergency situation, but could not carry out necessary actions themselves. There is historical precedence for this conclusion. In particular there are certain functions now being performed by the office that would nave to be curtailed without continuing federal programs. These include:

* The ability to provide technical information and advice to small and large business and industries on the efficiency of energy use thru the Technical Assistance Program.

* The ability to obtain, analyze and transfer information of all kinds to the citizenry.

- The ability to provide energy audits and advice to local governments.

The State Government is under severe fiscal constraints and it does not seem likely that they will be able to pick up most of these very necessary programs. Consequently, we believe that the Federal government has the responsibility to actively support energy conservation by carrying out the following:

1. Establish and work toward specific goals for energy conservation.
2. Carry out by doing or encouraging research on more efficient ways to use energy as well as evaluation of conservation techniques.
3. Establish and maintain an information transfer system.
4. Assess and work to remove the many institutional barriers to the attainment of maximum conservation efforts. Market forces are not sufficient to accomplish this. (addressed earlier)
5. Continue energy assistance programs to ensure a decent level of health and living standard for all citizens.
6. Treat all energy sources equally. the federal government should either remove all subsidies for conventional energy supplies, including nuclear, or distribute what subsidies are allowed evenly to all sources of supply, including conservation.

We believe that strong leadership is essential in this area. If the country's leaders seem to think that conserving is not very important, the vast majority of the public will act accordingly. That could have serious consequences on our economic health and national security.

MR. ONDICH: Thank you, Ms. Ellett. I would like to open it up for questions and begin with a question of Carol Allen from the New Jersey Community Action program.

We heard over the last two days a great deal about the Weatherization Program. We had a representative from the New York Community Action Program yesterday talk about utility spillover effects to the weatherization programs - audit programs information dissemination programs and so on. Apparently these utility programs helped the New York CAP Agencies.

This morning we had a representative from General Public Utilities that services part of New Jersey, and there was very little discussion about what GPU was doing on their own, or in conjunction with local organizations. Are there any other programs within the state that specifically help the weatherization program?

That's the first part of the question. The second part Secondly, how does the New Jersey Weatherization Program work with the Low Income Energy Assistance Program, LIEAP.

MS. ALLEN: Okay. The first one is national Residential Conservation Service program which was a DOE program and part of the National Energy Act in 1977 or '78. It was a mandated program in that each state held hearings and had certain goals whereby utilities are to provide audits to people and also to provide them lists of contractors that could make energy conservation modifications and lists of lending agencies. A step in between the audit and this list that was to give back to the person a list of the cost-effective modifications which would be recommended for the particular person's dwelling.

The New Jersey State Department of Energy had already anticipated, a year earlier, a program which is called HESP, Home Energy Savings Program, so they had a kind of program going the year before RCS came in. We still have our HESP, and I'm also familiar with the New York Program which is called HIECA, which is the RCS program.

HESP is a potentially good program; however, it has very little for low-income people. When they were setting up HESP, according to Federal guidelines, I testified and suggested several things that they might do specifically for low-income people with the idea that low-income people wouldn't probably get into the contracting and the borrowing and so forth. I also said I didn't think that low-income people would ask for a $10 audit even though the cost of an audit is probably more like $100, and with all the follow-up of the cost-effective modifications.

Low-income people would not elect to spend $10 without knowing why or what it was going to lead to. So I said why didn't they give the audits free, and they said there's one group of people who receive a utility allowance, elderly and handicapped who received a state utility allowance, who are usually identifiable on utility bills because of being in that category. They're actually certified through another pharmaceutical assistance program. So they have a card called the PAA card with which they get low cost prescription drugs. That comes out of the casino gambling fund. So they also get a utility allowance out of the same casino gambling money. So they were easily identifiable on utility bills.

The State DOE said, okay, if they ask for a free audit, we won't have the utilities charge them the $10. That left out the rest, non-elderly, non-handicapped, the so-called working poor, the AFDC recipients. There was nothing provided for them. They have another state DOE program, a hotline, which takes the input, actually takes the calls. It's a toll free number for HESP. So people that are low-income people and identify themselves as such, first of all, will be referred to their nearest low income weatherization program. They will receive some information such as how they can do a self audit, and some low cost/no cost tips, another kind of energy savings.

So, to answer your question about the utility connection, it's a very, very important subject. In fact, I have asked the National Community Action Agency Association at their annual meeting to have a workshop and bring together people from all over who can talk about this. I think there are some good ideas out there. For example, the Tennessee Valley Authority has provided very low interest loans for woodstoves and solar devices for people, and then all the way out in California, and similarly in Washington and Oregon, they have interest free loans on solar implementation and on conservation with some kind of a buy back arrangement. so it's essentially costless.

In the New England states, they're trying to get new legislation passed. Every state either has a bill or a proposed bill to get very, very low interest loans for conservation. As far as New York goes, I understand that, in the HIECA program, the utilities lend at their rate of return, 9 to 11 percent.

They lend to people, and I know of a couple of specific utilities in the southern tier of New York State who have very good cooperative programs of helping, working with Community Action Agencies, where the utility actually does all the audits for the low income weatherization program.

One part of the low-income weatherization program is the initial audit and assessment, and in this case, the utility does it, which, in a sense, might reduce the cost of the low income weatherization services by 10 percent or so.

But that's very local, and I think it's very specific to one company. So I would say, in summary, that there are things out there, but they're not really working for low-income people yet.

I hate to criticize. I hate to go into a hearing and criticize New Jersey RCS, because it's an important energy conservation program. It might be for middle income people to take advantage of, so I don't like to be harsh, but I have to say that there is not a great deal there for poor people.

MR. ONDICH: We learned yesterday that the audits are now free under the New York HIECA Program. Could you tell us about the LIEAP/ WAP Program in New Jersey?

MS. ALLEN: You mean how they connect?

MR. ONDICH: Yes, if they connect.

MS. ALLEN: The LIEAP people asked me to write two paragraphs to put in the LIEAP state plan about the weatherization which I did, and I included mention of the low cost/no cost information on the DOE hot line. They put it in the LIEAP plan, and it went out to all the county welfare offices who were delivering the LIEAP plan. To the extent that people get into a conscientious social service office where the person dealing with them is interested in more than one thing, they get needed information and services. This often happens in the CAP agency where we now have something called the Energy Crisis Intervention Program, which does a number of things for people, including information and referrals.

There's a section called Access which means providing people with access to all other programs, and that means referring them to other assistance programs. That is the only formal connection. The weatherization program usually has a backlog. So it may not be a great blessing to be referred to it at any given month of the year, because chances are it would be a few months in arrears. So the person wouldn't get taken care of, perhaps, through the next season.

So that connection is the paper connection, and, to the extent that people make referrals, then more people sign up for weatherization.

MR. ONDICH: How do you think the proposed changes in going from categorical program funding for weatherization into block grants would affect the weatherization program in the State of New Jersey?

MS. ALLEN: I think it would significantly threaten low income weatherization assistance. I don't like to use the word program, because we may be talking about something else, not the same thing, but the concept of low income weatherization assistance would be greatly threatened.

Senator Weicker is coming in with his bill that says 65 percent of perhaps $336 million for state and local conservation programs, but this morning in testimony, the Associations such as Counties, State Legislatures, Governors, Municipalities, and Mayors all came in together saying they wanted to see a maximum of maybe 30 percent of that state and local block grant for low income weatherization.

But they believed that 65 percent was too high because of regional differences, because of the need for flexibility and so forth. A number of senators, more regional than partisan, come in very strongly for low-income weatherization assistance.

Two that I mentioned, Cohen and Weicker and also Senator Chafee from Rhode Island and Senator Heinz from Pennsylvania, have all come in very strongly for a low income weatherization program. One of the problems with putting it into the community development block grant, as has been proposed, was pointed out by Senator Heinz, who says that most of his poor people in Pennsylvania are rural, and they're outside of cities, so the HUD programs wouldn't reach them even if they had a weatherization component.

There's some advantage in an urban type program for weatherizing public housing and big multi-family dwellings occupied by renters. Those have been rather hard to get at through low income weatherization programs so there is a need for something there.

As I said at the beginning, I'm an advocate of a Federal low income weatherization program as such, because I think it's the only way to get that particular job done.

MR. ONDICH: Thank you. John?

MR. MILLHONE: I have a couple of questions. Although I'm not familiar with its details, I know that there is some consideration by the Health and Human Services Department in changing its rules so that some of the assistance payments can be used for weatherization investments, assuming that the payoff is in a relatively short period of time.

The linkage of weatherization to assistance programs is something that many people have seen would make a great deal of sense for some time. Is there any reason why a state can't do that now, or do you support that approach? Is that something that has some local difficulties that are not apparent to those of us who look at the desirability of joining those programs from the national level?

MS. ALLEN: Okay. Let me speak from my experience. I have sat on the advisory committees of the low income energy assistance program. Since fuel assistance is in HHS, it comes down to the NJ Department of Human Services. There's another state agency in New Jersey, the Department of Community Affairs, which administers the DOE weatherization program. I've sat through planning sessions where they've had to institute programs based upon Federal regulations, funding requirements, and grant processing.

In the case of the Fuel Bill Assistance Program, there is a design of a state plan where certain choices are made by the state as to how it will do the fuel bill assistance.

Both groups get mixed in a great many details. Therefore, I see no bureaucratic advantage in bringing them together because that would mean that all these people would have to learn the details of the other program. It seems to me from my observation that they already have enough details to deal with. A referral system should be conducted. In the state plan for fuel bill assistance, there were a couple of paragraphs directing the certifier to ask the person if they would like to sign up for low income weatherization and send it to the nearest agency.

That's the referral system. What you may be looking for is some kind of a real overlap where there would be kind of a research connection such as identifying those people with really outlandish fuel bills. Tony Maggiore, of the Fuel Oil Marketing Subcommittee Study on Fuel Assistance might say that the connection is to find those people who have the most outlandish fuel bills. That's why a vendor payment method is recommended, because it lets the social agency see the bill and analyze the person's energy costs. The social service agent could go over bills with people and try and see if they can come to some understanding of alternatives to paying so much for fuel.

In that sense, there is a connection in terms of seeking out those people who need weatherization assistance most or who need fuel burner efficiency modification or in some cases who need alternative energy sources more. There is that connection, and that has not been proposed in any program yet.

Chances are if it happened there would probably be a third agency connected which would do just that. I have the greatest of respect for these State government departments when they deal with these very hard questions of how to help people with these great problems with limited amounts of money. But I don't see them being able to pick up and do another thing, which is to put programs together.

They've had to change agencies, as you know, in various ways from year to year. Programs have moved from one agency to the other, and there's a multi-layered approach. I don't see, at the state level, 50 states being able to efficiently design fuel assistance and weatherization programs separately or both in combination.

Maybe Massachusetts and Wisconsin would do fine, and the rest of the states would probably get completely bogged down.

MR. MILLHONE: I'm afraid you're right, that sometimes the state bureaucracies are as difficult to get together to do something efficiently as Federal bureaucracies. I can say that having been a state bureaucrat at one time, head of the Minnesota Energy Agency and Chairman of the Fuel Oil Marketing Advisory Committee that tried to develop what we thought was a good plan to do this.

Mr. Chandler, a quick question. In your list of programs that were being excised, you didn't mention building energy performance standards. I wondered if that was just an oversight or if you had particular sympathy with the Administration's effort to eliminate that one.

MR. CHANDLER: That was a keen observation that I left out building energy performance standards. I didn't emphasize that mainly because of the acts that Congress has already taken to change BEPS -- which I think effectively diminishes the effectiveness or the hope that the program will accomplish what it originally was intended to accomplish.

MR. MILLHONE: The new Administration is seeking to deregulate the price of energy. Are there any implications of such a policy, if it is pursued successfully, that you think that policy should have as far as the policies of the prior Administration? That is, I don't think I asked the question very clearly, but if we do proceed to deregulate energy prices, are there implications that you see should occur as far as some of these prior Administration policies, such as appliance standards, BEPS, RCS or what have you, or should we be doing the same things under the current Administration in those areas as had been proposed be done during the prior Administration.

MR. CHANDLER: Let me answer it in two parts. First, I think from a strict natural resources management point of view, deregulation of energy prices makes a lot of sense. I think a great deal of the problems that we've experienced were due to oil price regulations. I think natural gas price decontrol would have a beneficial effect. However, I think you have to couple price decontrol with at least two sorts of policies, the first being a policy that takes care of the equity problems to make sure that those who get virtually crushed by rapid price increases are taken care of, and specifically I mean that the weatherization program should be increased many fold.

The second policy that has to be implemented with price decontrol is some sort of policy to take care of the macroeconomic effects of shifting large amounts of money from one sector of the economy to another, in other words, from consumers to energy companies.

In terms of whether programs such as appliance efficiency standards, even building energy performance standards are needed, I think you can make a very good argument, very good case that they still will be needed for several reasons, most important of which is the fact that consumers don't see the full marginal price of energy, especially electric or utility consumers who get a price signal that reflects the average cost of energy and not the cost to society which is the marginal cost; and because of informational problems, the market just does not work perfectly.

So from a societal point of view, I think you can still defend every one of these programs.

MR. MILLHONE: Thank you. Ms. Ellett, I don't want to ask an unfair question, and I know asking for specific information is difficult, because I've been asked for specific information when I've been on the other side, but I'm curious about the relationship between the amount of money that Maryland is spending on its energy programs and the total state budget. What I'm getting at, of course, is what percentage is being spent on energy programs in your state, and my hypothesis is that it would be a fraction of one percent, and then my question would be do the Governor and lawmakers of the state really feel as if energy is that low a priority in terms of all the other things that they have to deal with.

I want to tell you where I'm going before I ask.

MS. ELLETT: I can't tell you the specific numbers except that it is a small amount. They give a lot of rhetorical support to energy problems. I think the main problem in the immediate future, say the next two years, for instance, is that there will be public pressure for expenditures of money in many areas such as education; -- financing education is one that is particularly big in our state. It may be big in all the states right now because of the cutbacks.

Cutbacks have been proposed across the board in all programs at the federal level, so that I don't see them feeling they can give energy programs a big priority and pick up on these things right away.

Then the state energy office might be disbanded again which has happened before. Not entirely disbanded, but they won't have the money to keep people there so the office can do very little, and then when things get squared away again, they start hiring. It's been too much of a seesaw for them to work effectively, and that's why I think cutting these programs out suddenly, or drastically reducing them suddenly is not fair to the states.

Yes, maybe the states can and should be spending more money in many, many areas, but this has to be a gradual process. It shouldn't be a sudden reversal. The tax, for instance, has not been cut yet, so the money is still going to the Federal level. It's not there for the people in the state to give to the state if the state has to raise more taxes. It's a vicious circle, and, therefore, needs to be a more gradual, definitive signal sent to the states so they know in advance what they need to pick up on, -- I think this applies to all the programs, not just the ones on energy conservation.

Then, again, there are the programs I particularly mentioned that a state can't handle efficiently by itself.

MR. ONDICH: To follow up on Mr. Millhone's question, and, I do not want to ask for unfair specifics - what about the Maryland programs? Over the last two days we have had a lot of discussion about a number of programs, the weatherization assistance program and programs in general that assist low income individuals.

Most of your discussion and recommendations do not specifically address these programs. Do you have any specific comments about them - those in the State of Maryland?

MS. ELLETT: I don't know a great deal about the programs personally. I haven't recently talked to anyone in Health and Human Services.

In regards to the weatherization program, again, it's pretty much what you've already heard. For the State of Maryland it's mostly necessary in rural areas rather than in the cities. People don't live in their own homes. So the problem is getting at the rental properties, and every year that subject is discussed by by the state legislators in hearings about how they can get landlords to do something, plug up leaky buildings. In many cases it can't be done on a remotely feasible economic basis.

They just don't know what to do. I don't know what to do either. I haven't heard a reasonable answer to what can be done about rental property. The League's position on low income assistance is essentially what you just heard Mr. Chandler saying. We are in favor of the decontrol of prices. We think that it is necessary so the public gets the right signal about how to use natural resources.

At the same time, we would prefer this to be gradual, and you have to have some kind of low income assistance program. I did ask some of the people at the Maryland Energy Office about the coupling of the weatherization and the LIEAP program, and they preferred not to see that done, mostly because it's essentially getting at two different populations.

They don't see any real advantages to combining, and they felt some instinctive disadvantages might be inherent in that.

MR. ONDICH: Thank you very much. I am looking at my schedule, and I believe we have only one remaining witness, Stanley Ezrol from the Fusion Energy Foundation. Is Mr. Ezrol here? If he's not, I would like to take a break for about ten minutes, and we will reconvene at 3:00.

(Whereupon a brief recess was called.)

MR. EZROL: I think the point to be made to people, including the audience, who have had a chance or will have a chance to look at what I wrote afterwards is that I think the philosophy behind the United States conservation program has been in error. The idea that's been repeated over and over again is that a barrel of energy, a barrel of oil saved through conservation, is the equivalent of producing a barrel of oil at less cost.

That's been repeated in many different ways. Now the fact of the matter is, there are two points to be made. The first is that that is almost obviously false. It should be recognized as false on two counts. One is that I think the history of the 1970's is one which demonstrates that there is, first of all, very significant cost in attempts to save energy through conservation. Anyone who drives long distances, I drive between Washington and New York City relatively frequently, I think, either has no respect for themselves and their own time, or they recognize it's a reduction in living standards to drive at 55 miles an hour.

It's not something that we've saved at no cost. We have a situation where due to changes in standards for air conditioning and heating, we have elderly people who have died because their homes haven't been heated to the levels that maybe they used to heat their homes to.

Otherwise, it's just a lot less comfortable to work in buildings of 80 degrees than it is to work at buildings of 70 or 72 degrees and people who work in those conditions are less productive than they would be otherwise.

There is significant cost that's been involved in the energy conservation efforts that we've made so far and if we continue in that direction, there will be added significant unit costs. You know, the fundamental thing which should be obvious is that the certain level of energy that you use, call that 100 percent for arguments' sake, the theoretical maximum that you can save through conservation is that amount.

There's no way that you can get any more energy than that amount through conservation. Now the other thing which should be obvious is that the more you reduce your energy consumption below that 100 percent, the more difficult it is going to be to reduce more, and there might be an easy one or two percent saving which is, you know, if there are people who take barrels of oil out in the middle of the street and burn them for kicks, you know, there's not very much cost involved in saying don't do that any more, but once you get beyond that, you have to invest in various kinds of technologies and devices, and I'm sure you've heard all about them in the last couple of days.

You've got to do all sorts of things to reduce the saving below that level which involves investment of technology, an investment of scientific manpower, and an investment in terms of human living standards and comfort.

Now, on the other hand, there's such a thing as producing energy and producing new energy technologies which is what the human race has historically done when it's faced situations of energy shortage.

We've brought new resources into play. Coal wasn't always a resource for man, but when he discovered how to mine it efficiently and how to burn it efficiently it became a very important resource. Oil wasn't a resource until about 125 years ago. It has become a very important resource.

I fundamentally reject the idea that there is some limited quantity of resources that we have and that therefore we have to adjust our technology or our use of technology to some fixed limited amount of resources. The fact of the matter is that we have coming on line the use of uranium in its various forms, deuterium, tritium, in controlled fusion reactions to produce energy, and the history of investment in these sorts of new energy technologies is that the more you invest in them, the greater your return is.

In other words, the curve of investment from creating new technologies goes something like this whereas your current in terms of return per investment in conservation technologies goes something like that. So, therefore, it's fundamentally more efficient to invest in those new technologies so that from the standpoint of the conservation program, the thing to look at are things like magnetohydrodynamic uses of coal which give you a higher energy return per investment input, and frankly I would like to see a lot of the conservation funds shifted into R&D and advanced technologies although that might be beyond the scope of the hearings here. Frankly, that's the only thing that can be done to save the nation.

The other point I would like to make is that there is an ecology movement in this country. There's a conservationist movement in this country, and you've heard from spokesmen of the Environmental Policy Center, at least they were scheduled to testify today. There are other organizations of that sort.

These people are on the public record as being liars, and just to refer one incident of that sort, I witnessed the luncheon speaker at an Environmental Policy Center Conference on Water Resources which was held here in Washington this past March who was someone who's gone under the names of Abby Hoffman and Barry Fried. He's a convicted cocaine pusher.

What he said at that conference to the great applause of the Environmental Policy people who were in attendance is that we have a certain point of view to push and the way to describe that point of view in terms of water policy was the revival of worship of river gods and other sorts of ceremonial celebrations of pagan river gods.

He said in terms of pushing our political point of view, ignore facts, ignore science. That's the enemy's weapon, that's not our weapon, so that's what I mean by being on the public record as being liars.

Another case which I think is worth looking at is an organization called the Club of Rome, which has an affiliated organization in the United States, called the United States Association for the Club of Rome. They were the sponsors of the study called Limits to Growth which was published, I believe the year was 1969, and if you trace back a lot of the debate over conservation in this country, that book is probably the most widely distributed and most widely cited source for the need to cut back in consumption of energy resources as well as other resources.

Elizabeth Dodson Gray who is a member of the Board of Directors of the U.S. Association for the Club of Rome has published widely on the topic of ecology, and stated at a membership meeting of that organization in Washington, actually Chevy Chase, Maryland, in the beginning of this year, that her purpose is not strictly conservation. It's not strictly ecology, but her purpose is to eradicate the Judeo-Christian system of morality.

Her specific quarrel with the Judeo-Christian system of morality is that it places man as morally superior to nature, and she equated that placing of man in a position of dominance over nature as being the equivalent of the Nazis who thought that the Aryan race was superior to the Jewish race or to other races.

So from my standpoint, the United States is a republic, the United States Constitution embodies a certain respect for the dignity of man which emphatically insists that man is superior to nature and emphatically continues the Judeo-Christian tradition which is that the earth, nature, the living things on the earth, the resources that are here, are here for man to subdue and to use to his own purposes, that we are not the slave of nature, as Elizabeth Dodson Gray would have it.

So when looking at the so-called authoritative studies of the Club of Rome and of organizations whose leaders are members of the Club of Rome. If you want to look at those, there are a number of them in the ecology movement, you have to ask yourself to what extent can we trust the conclusions of people who start from the premise that man has no dignity. That's all I'd like to say.

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FOLLOWING IS MR. STANLEY EZROL'S WRITTEN STATEMENT

Conservation can never produce energy. United States conservation policy will continue to be totally incompetent unless a vicious lie which has served as the philosophical basis of that policy is eliminated from consideration. Before describing and disabling this untruth which lies behind most of the testimony you have heard yesterday and today, I want to alert you to the seriousness of the situation -- the perpetrators of this fraud publicly state their intention not only to undermine the United States and its Constitution, but to eliminate constructors of this republic. Consult the published works of the sponsors of the Forrester and Meadows Limits to Growth which provides the impetus for energy conservation for the last dozen years -- I refer to Club of Rome spokesthing Elizabeth Dodson Gray, calling her thing with no intended malice but adopting my usage to her own moral self description as a thing morally equivalent to inorganic objects, who claims the urgent task of ecologists, conservationists, and friends of the earth to be the destruction of the Judeo-Christian system because of the founding injunction of that system to man to "Be fruitful and multiply, and replenish the earth, and subdue it and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing."

The point to be made is that this nation is in the process of destroying itself, at least in part by accepting the lie that failure to use energy is the equivalent of producing energy.

This is not the case because the pagan ecologist view of resources as being provided in limited quantities to man at the fluctuating whim of various little nature deities is simply not true. All of Man's resources are defined by the technologies Man has created. Man has abided by the Biblical injunction to be fruitful and replenish the earth by developing increasingly energy-dense technologies which bring increasing proportions of organic and inorganic nature under his dominion.

A barrel of oil saved is not the equivalent of a barrel of oil produced because the second barrel implies the production of oil producing facilities. More importantly, we must be in a situation where the production of the energy equivalent of a barrel of oil represents advances in technology which bring new resources such as Uranium, Deuterium, and Tritium under man's dominion as energy resources. The investment of capital in energy conservation can never expand the energy resource base -- for that reason so-called "conservation technologies" are pure waste.

To elaborate: Denis Hayes has claimed and frequently been quoted in his lying claim that United States energy consumption can be reduced 50% without reducing living standards. He can make this claim only by ignoring what human life is. For him, the additional hours of travel time caused by the 55 Mile per Hour speed limit are not reductions in living standards; the drastic or total curtailment of the ability of the average American to travel between cities would be acceptable; the ingestion of fifty pounds of algae to replace the protein equivalent of one pound of meat would, according to Hayes, result in a cost-free savings in energy usage. To this brutish, conservationist view of human nature, I counterpose a statement by American Economist E. Peskine Smith:

> Man's office in the world is that of engineer; all his real power is mental. It is a waste of power for him to take that upon himself which can be better and more cheaply accomplished by brute matter. He ceases to do so just as, by studying the laws which his Creator has imposed upon the material world, he rises to his Creator's design and becomes its master.
>
> It is manifest, too, that there is a law of constant progress in man's appropriation of natural forces independent of the discovery of any new motive powers. Every machine facilitates the construction of new ones. It cheapens them; it enables us to undertake those previously impossible without regard to cost for want of the necessary quantity and duration of force; and it liberates men from physical toil, to study and experiment. Each new truth discovered is the key to a whole magazine, and each new art the parent of a thousand.

The fact of the matter is that the capital investment already mis-directed into conservation measures throughout the seventies has not only resulted in palpable declines in United States living standards, but has been a deduction from our potential ability to develop new energy producing technologies.

You may still object that there is real energy waste and that we must use energy more efficiently. We should use energy more efficiently, but conservation is inherently inefficient. High energy density technologies like Magnetohydrodynamic technologies make the burning of fossil fuel more efficient. By contrast, the efficiency of conservation measures declines as their intensity increases. That is, the more you conserve, the more difficult it becomes to realize "savings" from the conservation effort. Even the most horribly LSD-deranged ecologiest must admit that the absolute savings from energy conservation must be less than 100% of the energy used prior to commencement of conservation efforts, less the energy expended in the conservation effort. The closer we get to this limit (and it is not possible to get very close at all without slaughtering the human race wholesale), the more effort, and, indeed, energy we require to realize additional reductions in consumption. This is analogous to the situation which oil shale extraction engineers can explain to you. The more you squeeze a rock, the less oil you get per pound of pressure applied. The same is true of blood.

The history of the exponential increases in the levels of energy man has made available for his own use demonstrates that investment in advanced energy producing technologies yields the opposite result: a greater return is realized per unit of additional investment as the level of investment is increased.

I wish to conclude with some remarks on the national security implications of conservation policy. As many observers, including former C.I.A. Director, and Secretary of Defense and Energy James R. Schlesinger, have noted, diminishing reserves of energy and other resources will potentially lead to great and small wars over remaining supplies. If this pressure is accepted, the conclusion is inescapable that conservation measures which direct investment away from the production of new resources and away from high energy-dense technologies which have direct weapons applications, tend to condemn us to a situation where we will have to fight for resources with inferior technologies and an industrial base which has been decimated by this mis-direction of capital investment.

MR. ONDICH: The focus of these Hearings is energy conservation, as it existed and how it may exist in the future.

The concerns that we heard over the last two days have been about a number of very specific programs in energy conservation, and a lot of people have come here very concerned about how low income individuals are going to survive if some of the assistance is eliminated. We are not talking about very sophisticated technology, putting a new window in, weatherstripping and caulking. In fact, these are quite unsophisticated.

How do you respond to this? I think your concern is the development of technologies that are quite sophisticated and not the direction and focus of these hearings.

MR. EZROL: The thing that we're up against is that what you're really opening up here is a discussion not only of weatherizing, you're opening up a discussion of the artificially high cost of energy at this point which, you know, certainly goes well beyond the range of the EPA's authority.

Again, the general point to be made, and in terms of specifics, you know, obviously if there's a broken window, it should be fixed and so on, but the general point to be made is that the long run efficiency of building new housing is higher than the efficiency of going back and retrofitting existing housing.

Now we have a problem given that the Reagan Administration doesn't seem inclined to adopt this sort of economic policy. It would make it possible to build new and more effective housing. It also doesn't seem inclined to give much help to people who currently cannot pay their oil bill, given the cost of oil currently, and can't afford to do the other sorts of things that might be done with the housing they have.

That's a problem. The Reagan Administration has, I think, a severe problem in the economic area, and I think if you look at the way that certain aspects of Reagan's policies have been adopted in Britain and other places, I think these things may eventually translate into the same sort of political upheavals that we've seen elsewhere.

That's a problem that I would like to correct. In terms of levels of investment, I think I recall the figure, $184 million for things like weatherization aid. If you look at, you know, the entire fusion research and development budget which I think comes in somewhere under $400 million, in other words, roughly double weatherization, you know, looking at the economy as a whole, you've got weatherization which has at best marginal impact on the economy, in other words, at best you're going to be saving, you know, somewhere in the range of a few percentage points of home heating costs which themselves are a few percentage points of our entire energy consumption, as opposed to something like fusion, which could over the next 20 years double, and that's sort of a rough figure, but I think it's in the right order of magnitude, double the energy output of the United States between, say, now and the end of the century.

Beyond that, it could multiply the energy output of the United States by many orders of magnitude. So that in terms of balancing one against the other, it should seem fairly obvious that, you know, first of all lowering the cost of oil, lowering the cost of energy generally may be much more effective in terms of helping people who are currently in situations where they're too poor to afford the energy or where they're not living in properly heated housing and so on.

Beyond that, the investment that we put into developing new technologies is far more effective than going back and trying to squeeze, you know, a few more percentage points and efficiency out of the already low energy production levels that we've got now.

MR. ONDICH: Okay. That is all the questions I have. Do you have any other statement?

MR. EZROL: That's it.

MR. ONDICH: Again, I appreciate your coming. This concludes the Section 11 Hearings for 1981. We open the hearing record for two weeks following the close of today's session for anyone who would like to submit testimony. If anyone seeks additional information about the Section 11 process, we would be very receptive to that request; you can send for information to the Environmental Protection Agency, Office of Research and Development (RD-681), 401 M Street, S. W., Washington, D.C., 20460.

(Whereupon, the meeting adjourned at 3:45 p.m., July 15, 1981.)

V. J. ADDUCI
President and Chief Executive Officer
Motor Vehicle Manufacturers Association
of the United States, Inc.
1909 K Street, N.W. Suite 300
Washington, D.C., 20006

WRITTEN TESTIMONY

The Motor Vehicle Manufacturers Association of the United States, Inc. (MVMA) appreciates this opportunity to express its views on the important subject of energy conservation. MVMA represents a group of companies whose primary business is the manufacturing, assembling, and distributing of motor vehicles and motor vehicle related products. Although not considered an energy intensive industry, the members of the MVMA are vitally concerned with industrial energy conservation.

MVMA is encouraged by the changes in government energy policy made by the Administration thus far. We wholeheartedly support the Administration's drive to develop an energy policy focused on market realities. As most recently discussed in the July 1981, Department of Energy report, "Securing America's Energy Policy Plan," MVMA endorses the new Administration's decision to break clearly and openly with past energy policies that relied so heavily on federal regulatory intervention. We also agree with the energy conservation philosophy discussed in the DOE report. Reliance on market forces and the decisions of individuals and businesses, unencumbered by artifical government subsidies or regulatory controls, will produce cost-effective improvement in energy usage.

MVMA members have participated in the DOE voluntary energy conservation reporting program, formerly the joint U.S. Department of Commerce/ Federal Energy Administration program, for approximately seven years. The most recent MVMA report submitted indicated an improvement in energy efficiency by the member companies of 25.4 percent through 1980 from the energy usage in 1972, the base year. These results typify the excellent results of U.S. industrial conservation. The DOE's Office of Industrial Programs data indicates that industrial energy use efficiency has improved steadily since 1972. Corporations reporting under this program reduced their demand for energy in 1979 by more than 2.2 quadrillion Btu, compared to what would have been used at 1972 efficiency levels of energy consumption. This is an outstanding accomplishment in view of the fact that industrial output increased by 17 percent over this period (according to the U.S. Department of Commerce, "1980 Industrial Outlook.")

These accomplishments by industry have been achieved solely on a voluntary basis and are unsurpassed by any other sector in the economy. These improvements have resulted from sound business decisions during a period of rapidly rising energy prices. Industry will continue to voluntarily improve energy efficiency in response to the economics of the market system. MVMA anticipates that these economic pressures will increase and that progress will accelerate, as natural gas prices are decontrolled as oil prices have been.

The American motor vehicle industry currently faces serious foreign competition which, led by the Japanese, has made sizable inroads into the North American markets. A government task force has estimated that a Japanese car imported into the United States has a $1,000-$1,500 cost advantage over a comparable U.S. car. MVMA members can meet this competition successfully, but suppportive government economic and regulatory policies are needed to allow the American economy to recover. MVMA supports the Administration's economic recovery program and believes full implementation of it is especially critical to the recovery of the U.S. motor vehicle industry. MVMA believes it is particularly important that DOE, EPA and other government agencies deliver quickly on the President's promise to reduce burdensome regulatory programs.

MVMA applauds the Administration's efforts which already have eliminated or modified a variety of unnecessary and costly DOE regulatory programs including the Federal Emergency Building Temperature Restrictions, the Energy Information Administration Survey of Manufacturing Industries Energy Consumption Study, and the Building Energy Performance Standards. Furthermore, MVMA supports the Administration's reductions in spending for DOE programs. The Administration's proposals for freeing up market forces, improving investment incentives and bringing about economic recovery will foster the adoption of conservation measures without the need for the current federal, state and local conservation programs.

MVMA endorses the Administration's proposed budget reductions to mandatory state and local conservation programs. The promotion of mandatory conservation programs at the state and local levels has been increasing. Several states have enacted mandatory conservation regulations involving lighting for new and existing buildings, boiler combustion efficiency, maintenance of oil-fired heating equipment, and temperature controls for heating, ventilating and air conditioning equipment. These regulations have resulted in the expenditure of a substantial number of manhours to compile and maintain survey information, reports and records, without commensurate cost savings. Rising energy costs will continue to provide a more than adequate incentive to conserve energy; therefore these mandatory state programs are unnecessary.

MVMA believes that free-market mechanisms should be relied upon both to reduce vulnerability to energy supply interruptions and to respond to such interruptions should they occur. MVMA consistently opposed many of the standby Federal Emergency Energy Conservation Plans -- compressed work week and restrictions on uses of motor vehicles -- proposed by the previous Administration. We are pleased that the present administration has revoked those inflexible and potentially burdensome conservation schemes.

MVMA supports the basic format of the current Office of Industrial Program's (OIP) reporting program which allows corporations to confidentially report individual corporate energy efficiency data through trade association consolidated reports to DOE. MVMA agrees with DOE's current position which allows industry to set its own conservation targets and report energy efficiency in a manner which is consistent with each organization's existing internal reporting procedures.

However, MVMA strongly disagrees with efforts by OIP, initiated during 1980, to require additional reporting on the basis of multiple SIC (Standard Industrial Classification) codes. These efforts would cause the program to become excessively complex and onerous for MVMA reporting firms and would lead to the provision of incomplete energy consumption data. MVMA supports the concept that currently allows reporting in the single SIC code of the manufactured end product of the corporation. MVMA reporting companies do not separately meter energy use for different product lines and many plants with complex product mixes has no other means available to them to readily identify energy by SIC code. MVMA member companies do not design, operate, manage or measure energy conservation or energy consumption by SIC codes.

Finally, MVMA recommends that DOE completely reassess the OIP's recovered materials reporting program. The current program is not cost effective and is of questionable value. DOE should discontinue this portion of the industrial reporting program until a full assessment can be made with proper input from industry.

In summary, MVMA opposes mandatory energy conservation schemes and supports the Administration's efforts to further eliminate the mandatory and burdensome elements of existing federal energy conservation programs. MVMA members will continue to support voluntary industrial energy conservation programs which have proven to be successful.

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The American Consulting Engineers Council
1015 15th Street, N.W.
Washington, D.C. 20005

FEDERAL ENERGY CONSERVATION PROGRAMS

We have listened to the litany of witnesses, at the EPA energy conservation hearings, lamenting the loss of funds for energy conservation and the effect it is likely to have on their respective interests. It is worthy to note that those expressing the most discontent with a decreased federal role are those who have benefitted most by it in the past.

The American Consulting Engineers Council (ACEC) does not view a lesser federal role as detrimental to the cause of energy conservation in America. On the contrary, fewer government programs will result in less federal spending, thereby bolstering the economy. The ACEC has been and is increasing its role in the energy conservation area. We are not alone in this effort. You have heard the testimony of The American Institute of Architects outlining their million-dollar program on energy conscious design.

There is a proper federal role in all this. It is in the area of research and information dissemination. Working closer with trade associations to develop and get information into the proper hands is one way the Federal Government can help. Trade associations like ACEC have access to that portion of the private sector that can turn government research into practical application. The Research and Management Foundation of the ACEC stands ready to assist in this undertaking.

How are private firms preparing to assume their new responsibilities in giving adequate attention to energy conservation?

ACTIVITIES OF THE ENERGY EXTENSION SERVICE

The American Consulting Engineers Council, a trade association for over 3700 professional engineering firms, has been involved in energy conservation since before it was considered an issue. We are design engineers whose members have designed huge undertakings like the mechanical and electrical systems for the United Nations Building, the Sears Tower, as well as the New York and San Francisco subways. We have also designed many small buildings that incorporate passive solar and other state of the art energy conservation measures. Consulting engineers are professionals, whom engineers themselves go to for advice and problem-solving.

The Energy Extension Service provides information and technical assistance to individuals, small business and local governments. There is no need to convince our members of the importance of energy conservation and they accept their share of the responsibility in moving toward an energy efficient and independent America. What follows is a more specific description of some of the activities concerning energy conservation in which we are involved. Please note: The sentence at the beginning of this paragraph describing the Energy Extension Service could easily apply to ACEC. ACEC is embarking on a large scale professionally handled public relations program to educate the government and private sector on who and what consulting engineers are and the services they provide. This program is designed to reach the energy conservation community from government officials to school and hospital administrators to corporation energy managers. Our point is that those who are serious about energy conservation and want professional technical assistance can get it. The members of ACEC are available and have the capabilities and expertise to provide it. Moreover, we are determined that no one should go without the assistance they need. We have just taken out full-page ads in the "Energy Users News" and the membership directory of the Building Owners and Managers Association announcing our energy services and listing firms all over the country that may be contacted. We intend to continue this practice and expand to other publications that will reach the widest possible audience. In addition, our 50 state and regional offices have and are producing energy directories to be distributed to local officials and businessmen. These directories will list local firms involved in the energy area. The Energy Committee of ACEC has produced a slide show entitled "If It's Energy, It's Engineering" that will be used by our members for presentations before local civic groups. This show contains 102 slides depicting energy conservation projects and the role engineers have played in them. It is designed to encouraged investment in conservation and point out the economic advantages. We point these things out to show how the private sector is responding to energy conservation needs and how there is less need for government programs.

We would like to make one other point in regard to the Energy Extension Service. A recent publication by the Solar Energy Research Institute (SERI) lists state offices and contacts for energy conservation programs and solar energy. Each state having three offices to contact if you have questions about energy conservation makes absolutely no sense. This is an example of duplication or triplication and overlapping of government programs.

THE RESIDENTIAL CONSERVATION SERVICE

The Residential Conservation Service (RCS) which includes the Commercial and Apartment Conservation Service (CACS) is another program with which we are concerned. Our concern is not that individual residences and business should not receive energy audits but where those audits should come from. The members of the American Consulting Engineers Council are in the business of providing energy audits to individuals, businesses, apartments and industry. Having utilities required to perform audits if requested by their custmers is no longer necessary because of the increased awareness on the part of the American people for energy conservation and the availability of consulting engineers and others to supply these services. There is no longer a need to insert the utilities as a middleman between the recipients of energy audits and those who provide the service. That is what the RCS and CACS programs do and results not only in another level of bureaucracy but an unneeded penetration of government regulation into the business world.

SCHOOLS AND HOSPITALS PROGRAM

As an association whose members have done many energy audits of schools and hospitals, we support the reauthorization of the program and think it worthwhile, but at the reduced levels of the Reagan administration.

ACEC is aware of the critical GAO report on the program and has some ideas of its own on how it can be improved. GAO contends that money for the program is not being used effectively because a disproportionate amount is going into Phase II design, purchase, and installation of energy conservation measures, when it might be better used in Phase I energy audits.

We recommended a larger portion of the Phase II money go for technical assistance. By using professional engineers to specify the cheapest yet most efficient items when a school or hospital needs an energy overhaul, a more cost-efficient building will result. It is a lot more efficient to spend $20 to specify a fan than to spend $20,000 to buy one that may be larger or smaller than necessary.

An energy audit, the way some people approach it, seems a simple process very often shown performed by complete novices with little training.

A school or hospital is not a private residence. It needs a lot more detailed study by someone properly trained and competent. Care taken when choosing who will perform technical analyses can save thousands of dollars when ordering and operating equipment. It is at this critical stage in the energy retrofit process that the most damage or good can be done. The more money spent at this juncture will increase exponentially the benefits when the process is completed.

SUMMARY

In sum, although we question the current level of government activity in the energy conservation area and generally support the Reagan Administration's funding levels, we also support a federal presence as mentioned earlier in the statement. Federal monitoring of energy activity and a program of supplying information and results of research activity would play a vital roled in achieving this country's energy goals.

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FRED ARMSTRONG
Assistant Director,
Government Services-Construction
Portland Cement Association
Suite 700
1730 Rhode Island Ave., N.W.
Washington, D.C. 20036

We wish to take this opportunity to comment on an assessment of the adequacy of attention to energy efficiency and conservation now being undertaken by your department, in compliance with Public Law 93-577.

While there are many approaches to conservation methods, we believe Section 11, Public Law 93-577, "Federal Non-Nuclear Energy Research and Development Act of 1974," provides a much broader mandate for oversight of federal conservation activities beyond those proposals outlined in your June, 1981 Issue Paper For Public Hearings. Since Congress does not define "adequacy of attention," the section is broad enough to include a review of federal agency actions taken, or to be taken, to encourage, or mandate energy conservation in programs funded by federal grants or financial assistance.

There are several laws which refer, or mandated energy conservation by recipients of federal aid, to affect a reduction of the importation of petroleum. Section 403, Public Law 95620, "Powerplant and Industrial Fuel Act of 1978," serves this purpose very well. Executive Order 12185, issued to implement the Act, expands and compliments this policy. Federal agencies which administer programs of financial assistance are directed to take actions that maximize the efficient use of energy and conserve natural gas and petroleum. Further, such agencies are required to issue regulations imposing conservation requirements as a condition of continuing to receive the assistance. Which such regulations, or revised regulations, may have focused attention on the need for conservation, the EPA assessment should include an inquiry into subsequent agency actions to determine the success of the program.

We understand EPA's desire to confine its assessment activities to the spirit of the President's energy policy, to rely on free market forces and a far reaching program of regulatory relief to induce conservation. This approach agrees with the Administration's policy that, "reducing oil imports at any cost is not a proper criteria for the nation's energy security and economic health". We agree that the importance of oil, tempered with regard for its cost and use, should continue if we are to remain a viable trading partner with the rest of the world. However, conservation of the product, and its derivative products, through the use of alternative materials that are of lesser cost, produce equal or greater life cycle uses, domestically produced, and are proven to be energy efficient, should be given priority consideration. We believe this approach is one of many activities that will serve to bring more positive attention to the need for energy efficiency and conservation.

Until such time as Congressional Acts, that mandate energy conservation to reduced the importance of petroleum are repealed, and the National Energy Policy implemented, the EPA effort under Section 11, Pulic Law 93-577 should be expanded to include an inquiry into those federal agency actions to carry out the purpose of existing statutes.

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JOSEPH A. BELANGER, Director
Energy Research and Policy
State of Connecticut
Office of Policy and Management
80 Washington Street
Hartford, Connecticut 06115

The President's overall policy of reducing government's involvement in the economic sphere of this country has led to three major shifts in the direction of federal energy policy: petroleum prices have been decontrolled, the Energy Emergency Allocations Act was repealed, and drastic funding cutbacks in energy conservation programs have been recommended. These federal actions have already begun to have significant direct impacts on all energy consumers in the State of Connecticut. In addition, they have narrowed the range of activities in which the state government can be active as it seeks to encourage both diversification of the fuels used in the state and reduction in the over reliance on any single form of energy, while at the same time protecting the quality of our environment.

Connecticut relies upon petroleum products to provide 70 percent of all of its energy needs. This is a considerably higher proportion than that for the nation as a whole. Increases in the prices of these fuels, which have occurred frequently, thus have had and will continue to have much broader and deeper impacts throughout every sector of the economy of the state than there will be in other regions of the nation. Because fifty four percent of the generating capacity of the electric utilities within the state are fired with petroleum products, price escalations have also significantly affected the price of electricity to all users (see Table 1).

In assessing whether the private sector will respond to market determined prices in ways which will lead to the most efficient use of society's scarce resources, several long term impacts on the State of Connecticut become apparent:

1. Increasingly higher fuel prices will lead to conservation activities on the part of the residential, commercial, industrial, and transportation sectors. The experience since the Arab oil embargo of 1973 has indicated that rising energy prices are the strongest forces in changing energy consumption patterns. Several western European nations, where the cost of energy is higher than it is here, have compiled better conservation records than has the United States. Results of surveys conducted by the Connecticut Energy Division also reveal that high cost is the largest motivating force for energy conservation among state residents.

2. Certain segments of our society and sectors of the economy are unable to respond directly to market price signals in appropriate fashion. For example, despite their desire to do so, low income groups and persons on fixed incomes cannot afford to purchase insulating materials; tenants do not have the incentive to insulate buildings they do not own; and transit districts frequently do not have additional buses to add to their systms when the demand for public transportation increases.

3. As shifts are made away from the use of petroleum products, there are various incentives to act in ways which could have significant detrimental environmental impacts. In the residential sector, rapidly increasing home heating oil prices could lead to the increased use of coal stoves. While the sulfur content of coal for home use is currently limited to one percent in Connecticut, it would not be readily possible to prevent purchases or sales of higher sulfur coal.

   The industrial sector uses petroleum products for a variety of its processes. Connecticut's air pollution standards are somewhat stricter than those of the other New England states, primarily because a large portion of the air pollutants found in Connecticut come from out of the state, most notably from the Midwest and Mid-Atlantic regions. Increased petroleum prices in the industrial sector could lead to significant pressures on state government to relax the existing air quality standards, and this could have serious long term impacts on the health of all of the citizens of the state.

   The electric utilities, in their own efforts to keep costs down while meeting the electrical demand, could seek permission from the appropriate authorities both to convert some of their

Table 1

Oil Use in Connecticut and the United States by Sector: 1978

(%)

	Connecticut	U. S.
Residential	72.6	39.8
Commercial	80.9	55.9
Industrial	66.1	37.2
Transportation	100.0	97.4

SOURCE: State Energy Data Report, U. S. Dept. of Energy, April 1980

Table 2

#2 Fuel Oil Prices in Connecticut and the United States

1973, 1979, 1980
($/MMBTU)

	Connecticut	U. S.
1973	1.62	1.63
1979	6.48	5.24
1980	8.02	7.04

SOURCE: Basic Petroleum Data Book, American Petroleum Institute, January 1981 and Connecticut Energy Division Price Survey

Table 3

Average Cost Per Kilowatthour in Connecticut, by Sector: 1970 - 1980

(¢/Kwh)

	Residential	Commercial	Industrial
1970	2.3	2.2	1.4
1974	4.1	3.8	2.9
1978	4.7	4.4	3.5
1980	6.4	6.4	5.5

SOURCE: Connecticut Energy Outlook: 1980/81: Annual Report of the Connecticut Energy Advisory Board, and Uniform Statistical Report - Year Ended December 31, 1980 for Northeast Utilities and the United Illuminating Company.

generating units to burning coal, as has already happened in Connecticut, and to purchase higher sulfur content oil, as has occurred in neighboring states. These too would add to air quality problems.

There is a vast array of evidence which indicates that conservation is the most cost-effective means to respond to rising fuel prices. Certainly since the 1973 oil embargo conservation activities have taken place in all of the sectors of the state's economy. As fuel prices continue to rise, the potential for highly cost-effective conservation measures continues to exist. In addition to reducing direct energy expenditures, conservation has a variety of other beneficial effects on both the economy and the enviornment of the state. Reduced demand for petroleum products in the existing market determined price situation could lead to an overall reduction in fuel prices; lower fuel expenditures resulting from conservation activities would reduce the pressures to relax or trangress environmental quality standards; large levels of conservation practices will both postpone the need for additional electric generating units and provide a longer period during which diversification of energy forms and greater use of renewable resource technologies can take place; and because conservation is more cost-effective than other means of responding to rising energy prices, implementation of conservation measures lead to a more efficient allocation of society's scarce resources than would otherwise occur.

The effectiveness and scope of private conservation activity can be greatly enhanced through public programs aimed at developing both information sharing networks between energy users and conseration experts and public information dissemination programs, and the creation of incentives of various kinds for consumers to implement conservation measures. Those segments of society which are unable to respond to market price signals, and thus will continue to suffer the most from energy price rises, also can benefit from publicly funded programs.

Approximately 65 percent of the State of Connecticut's energy conservation efforts have been federally funded. The proposed federal cutbacks will thus have a significant impact on the state's ability to promote conservation, which in turn will lead to a greater possiblity that the long term environmental and socio-economic impacts discussed above will result.

It is the federal government's stated policy to promote the efficient use of society's resources through reliance upon market determined price signals rather than through direct government involvement. This can only occur when the public is informed about what the available alternatives are, about what the overall cost-effectiveness of each of its options is, and when groups bypassd by the market mechanisms are provided with support. The Office of Policy and Management, in its recent report to the State Legislature on energy policy, has identified these activities as it primary strategies in dealing with the future of energy use and supply in the state over the next twenty years. (This report was reviewed but not included in the Transcript due to its length).

Continuation of the federal conservation programs identified in this review process would provide Connecticut and other states with the means to promote the President's basic energy goals. I therefore urge that these federal programs be maintained at their full funding levels.

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ELEANOR BELL, Energy Representative
Unitarian Universalist Service Committee
of Kansas (UUSC/K)
1206 MacVicar
Topeka, Kansas 66604

Thank you for the opportunity to participate in the evaluation of energy conservation measures. I have enclosed an energy policy statement for our organization that defines the context for our concerns.

BACKGROUND

Although the present evaluation focuses on nonnuclear energy technologies, government policies have created an artificial interrelationship between nuclear and nonnuclear that distorts the perspective on each, and the two cannot be wholly separated.

Independent scientific evaluation reveals that various solutions to energy problems compare as follows:

- o Conservation: In view of sharply increasing energy costs (in terms of real income--i.e., gross national product--energy costs have doubled in ten years), conservation is the most efficient short-to-medium range response to the energy crisis. Current rates of implementation of conservation measures will effect a reduction of power needs by the year 2000 to three-fourths that previously projected. It is estimated that one quad per year can be saved; the nation currently uses 76 quads per year.

- o Alternate technologies: These technologies--utilizing renewable energy sources--are the necessary medium-to-long range approach, with coal the transition fuel of choice. To rely on any limited fuel source is to consign ourselves to chronic crisis.

Appropriate implementation of these measures has been retarded by inequitable federal funding. The least acceptable approach to the energy crisis--i.e., nuclear power--has been heavily subsidized to the detriment of ultimate solutions. Government priorities for nuclear power generation have had the effect of discouraging conservation by projecting an erroneous implication that nuclear generation will create a panacea of ample low-cost power. In addition, oil companies have been buying up alternate technology enterprises--not to develop simple, low-cost efficient systems, but to control development (1) by retarding it to assure high prices for oil and (2) by developing expensive and complex systems in order to continue their control of energy marketing.

THE ISSUES

We of UUSC/K are concerned that this present hearing may be merely a technical compliance with the Section 11 mandate rather than a sincere effort toward effective implementation of conservation measures. This concern derives from the following rationale:

- o With virtually no exception, business and industry have never voluntarily accepted responsibility for the public welfare unless it coincided with corporate financial interests.
- o Current government policies promote a favorable climate for business and industrial growth while destroying many incentives for aggressive pursuit of conservation.
- o Federal funds to be made available to the states for all programs formerly administered nationally represent larger cuts than the amount of administrative savings to be realized. Since apportionment at the state level will be made primarily by business and industrial leaders (in or through state governments), programs with a negative financial impact on the corporate structure will be largely eliminated from funding.
- o The components of the resource construct cannot be unitized in terms of state boundaries. Two of the most critical--air and water--are particularly fluid and cannot be wholly regulated on a state-by-state basis. Similarly, business and industry are frequently multi-state operations and are in a position to play differing state laws against each other to their own economic advantage -- and often to the detriment of effective conservation.
- o Energy conservation is a universal concern, and ideally we should be moving toward world-wide guidelines; to retreat from federal control policies is a retreat from reality.

In the context of these serious reservations, then, we respond to your general questions as follows:

Question: How are private firms, state governments and local agencies preparing to assume their new responsibilities?

Answer: In the absence of uniform guidelines, each of these entities will establish individual priorities within narrow parameters of parochial concern. The result will be a fragmented, inefficient response that will weaken the long-range impact.

Question: Which activities will get priority from public and private organizations and what will be the consequences if some activities are discontinued?

Answer: Priorities will be determined on the basis of short-term economic consideration. Long range programs--many of which might ultimately be more effectively--will likely be terminated. Discontinuation of energy assistance programs for low income population could result in critical hardship.

Question: Have any new initiatives, opportunities or efficiencies been created as a result of the shift in Federal energy conservation programs?

Answer: The shift may accelerate energy costs more rapidly thereby creating a stronger economic motivation for conservation.

Question: How can the Federal government assist in this period of transition?

Answer: Possibly the most effective use of the reduced funding would be an educational program targeted primarily at business and industry as well as power providers. There is impressive documentation for the financial feasibility of conservation measures, and this should be placed in the hands of those who would be motivated by such knowledge. In addition, small business needs instruction in techniques for marketing conservation systems and feasible financing plans for small consumers.

Question: How should the Federal government evaluate and monitor the effects of its new energy policies and program changes?

Answer: This appears to be a moot question as effective evaluation and monitoring procedures require funding.

CONCLUSIONS

Given current policies, it appears that the most realistic prospect for energy conservation derives from the motivation of sharply rising energy costs. UUSC/K is not in a position to assess the detailed ramifications of the individual programs listed on pages 10 and 11 of the EPA Issue Paper. However, we feel our role is to impact as significantly as possible on broad policy determination. When appropriate parameters are defined, individual programs can be structured to meet specific needs.

ENERGY POLICY STATEMENT COMPILED FOR THE UNITARIAN UNIVERSALIST SERVICE COMMITTEE OF KANSAS

Members of UUSC/K are committed to energy policies defined in terms of human safety, conservation, ecological preservation, and financial feasibility. Within these parameters, we subscribe to the following:

- Conservation of resources must be encouraged by such measures as economic incentives and mandatory standards of utilization such as construction codes.

- Safety for the human population--both short term and long term--must be accorded primary consideration in the determination of future energy production operations. This includes the area of fuels (acquisition, processing, utilizing); production (construction of facilities, operations, shut-down or de-commissioning; and disposal of waste products.

- Energy technology must focus on simplicity; the least complex processes that can be efficiently employed must be initiated.

- All energy-related processes must be compatible with ecological preservation.

- All energy-related processes must be economically feasible. Energy is useless to both producer and consumer if the purchase price is prohibitive.

- Energy consumers at all levels must be offered incentives to utilize available resources to provide themselves with all or part of their own energy by whatever feasible process is locally available to them.

- "Gimmick" processes advocated as energy solutions must be avoided. These processes usually benefit special interest groups who rationalize them in terms of energy. They go largely unchallenged because others are unaware that they actually exacerbate energy problems.

- If utility companies are to continue to operate as protected monopolies, regulatory agencies must be structured for the protection of consumers at all levels. They must not be allowed vulnerability to pressure from special interest groups.

It is our conviction that safe and practical energy policies can and must be formulated within these parameters to assure an adequate suppy of energy, equitable distribution, and appropriate rate structures.

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GLENN L. BELLAMY
Project Energy Manager
Heery Energy Consultants, Inc.
880 West Peachtree Street, N.W.
Atlanta, Georgia 30367

President Reagan's energy budget proposals are of serious concern to all Americans.

Solar energy and conservation programs are being cut and in many cases eliminated. Cuts are deeper than anywhere else in the budget, yet other less promising energy sources such as nuclear energy are scheduled for increase spending. Also, are the President's advisors aware that the conservation program has already done more, faster and at less expense than anything else in America to reduce oil imports? We have just scratched the surface in adopting already available cost effective energy conservation measures. Solar and other renewable sources second only to conservation can also economically reduce oil imports and to provide more domestic energy.

The shifts in the energy budget have been described by the Reagan administration spokesman as strictly exercises to trim the Federal budget. I do not believe this to be true. If the budgets were being trimmed for purely economic reasons, then the nuclear budget would not be increased by 36% while the solar budget was cut by 67% and the conservation budget cut by more than 75%. Isn't the so-called free market good enough for the nuclear and oil industries?

Instead of taking a paring knife to some of the fat in solar programs, Secretary Edwards has taken a meat axe to the muscles of the solar programs. Secretary Edwards has said repeatedly that he is acting on behalf of a mandate received in the last election. He claims that a vote for Reagan was a vote for nuclear power, yet at exactly the time of the election a national Gallup Poll found that of seven possible energy sources solar was by far the most preferred with adult Americans and nuclear was by far the least preferred. The most recent Gallup Poll reinforces this same conclusion.

I do not ask for an increase in Federal spending, only that there be a fair and just system in spending cuts. In other words, not to make the deepest cuts in the most promising areas such as solar and energy conservation while increasing expenditures in much less promising areas such as nuclear energy. The D.O.E.'s energy policy under President Reagan states specifically "the government's role is not to select and promote favored sources of energy. Doing so risks wasting the nation's resources". If this is Reagan's policy, then why is he favoring nuclear energy?

Inasfar as environmental protection is concerned, I do not think there is any doubt that the environment of the United States will be much less affected by solar and other renewable energy sources than it will be by conventional energy source or nuclear power.

I believe the Federal tax incentives of energy conservation and solar energy in the commercial industrial sector are inadequate and should be increased. I also believe that depreciation periods for solar energy equipment should be foreshortened.

If we go back to the policies of the early and mid 1970's, as seems to be happening, then we are asking for a real energy "crisis" to follow our present energy "problem".

JOHN J. BENSON
Secretary and Executive Vice President
Construction Industry Manufacturers Association
1700 Marine Plaza
Milwaukee, Wisconsin 53202

The Construction Industry Manufacturers Association (CIMA) is a U.S. trade association which has for over 60 years represented manufacturers of construction equipment and major components. The approximately 200 domestic firms which are CIMA members account for about 95 percent of the U.S. dollar volume of this industry, which ships over $17 billion in products annually. CIMA speaks in behalf of the industry in various matters and is action-oriented to industry problems through co-operative industry effort.

CIMA members are deeply involved in energy conservation efforts . . . as fuel costs soar, energy efficiency becomes a competitive necessity. At larger companies, entire staffs have been formed with this as their single objective. Energy experts on CIMA member company staffs have usually regarded reports to the federal government as requirements that "go with the territory," and have compiled cooperatively despite the allocation of time and treasury required. Indeed, CIMA was quick to participate in the Department of Energy's (DOE's) "Industrial Energy Conservation/Reporting Program," recognizing that industrial energy efficiency improvement reports can be useful to both government and industry alike. In this regard, you should note that CIMA's industrial energy efficiency percentage improvement noted on CIMA's Consolidated 1980 Energy Report to DOE shows a consolidated 1980 association energy efficiency improvement percentage of 24.5% when compared with 1972 consolidated association calendar year data (9.5% in excess of DOE's 1980 industry target of 15%).

We feel that any new legislative and/or administrative proposals to extend industrial energy efficiency improvement reporting beyond calendar year 1980 should extend such program in substantially the same format as the present program, including the present rules which provide the identified corporate reporters can report in the "voluntary" program via trade association consolidated energy efficiency improvement reports to DOE as an option to "mandated" direct corporate energy efficiency improvement reports to DOE.

We feel that DOE "listened" to industry when the current reporting program (i.e., "DOE's Industrial Energy Conservation/ Reporting Program") was designed including DOE's current program reporting form and program reporting rules-this includes limiting reporting to two digits for all identified SIC code classifications. We do not see any need for changes and overhaul of such program forms and or program rules for any industrial energy efficiency improvement reporting mandated by Congress and/or the U.S. President beyond calendar year 1980.

We strongly support the concept of the present "voluntary" reporting program which assures industrial participants of confidentiality of individual corporate data. We feel such confidentiality is one of the hallmarks of this program and is absolutely necessary to protect individual business corporations from being forced to disclose confidential company data to their competitors.

We are strongly convinced that any future DOE industrial energy efficiency improvement reporting program should authorize industrial reporters (i.e., both associations and corporations) to use calendar year 1972 as a base period from which to measure industrial energy efficiency improvement data. Mandating a new base period later than 1972 would mislead both Congress and the American people since many industrial energy conservation initiatives would have implemented prior to the new base measurement period.

We believe that if new industrial energy efficiency improvement targets are necessary for the period from the present to December 31, 1985, such targets should be established on a cooperative basis between DOE and industry. (In this regard, please see the enclosed CIMA letter to DOE dated January 22, 1980 suggesting an energy efficiency improvement target for CIMA of 9.9% for a reporting period from 1980-1985, Letter Attached).

Finally, we believe that in any future industrial reporting program, energy reports for captive foundry operations (SIC Code 33) must be authorized for reporting in the SIC Code classification of the end product produced by the reporting association or corporation (in the case of CIMA, this would be SIC Code 35). We feel this qualification is absolutely necessary to assure that for industrial reporters.

In summary, should DOE's "Industrial Energy Conservation/ Reporting Program" be retained beyond calendar year 1980, CIMA strongly urges retention in accordance with the present format, under the present rules, and on the present DOE forms. In addition, should you need further assistance, guidance or constructive comments in regard to this most important issue, please contact Steve Pitzner of this office nad a mutally beneficial meeting will be arranged and/or additional constructive written comments will be submitted.

ATTACHMENT

Mr. Ernest Loeb
U.S. Department of Energy
Conservation & Solar Applications
Industrial Programs CS-40
Industrial Reporting Branch
Forrestal Building
Washington, D.C. 20585

Dear Ernie:

This letter is written on behalf of CIMA member companies presently participating in CIMA's "Industrial Energy Conservation/Reporting Program" under the auspices and guidance of the U.S. Department of Energy. Any reference in this letter to "CIMA" or the "Association" should be construed to mean these CIMA member companies and only these CIMA member companies.

The purpose of this letter is to advise you that CIMA has established a voluntary energy efficiency improvement target for this Association for a future reporting period; i.e., calendar year 1980 through calendar year 1985. Such target is expressed as a percentage improvement in the ratio (Btu's consumed per ton produced) for calendar year 1985, with calendar year 1980 serving as the base year.

After careful consideration and review within the Association, we have concluded that the most appropriate energy efficiency improvement target for CIMA for such reporting period would be 9.9%. We believe this target is most ambitious, but we think it is attainable, given the strong commitment of CIMA member companies to reduce energy usage through all feasible energy conservation initiatives.

It should be noted that this energy efficiency improvement (1980-1985) would be in addition to previous CIMA energy efficiency improvements from 1972-1979 (19.6% for the first six months of 1979 against the first six months of 1972). The new target represents an approximate 30% improvement in 1985 when compared with 1972.

CIMA has voluntarily established the indicated target for such future reporting period. We trust that DOE will consider CIMA's past performance and realize such target is most appropriate for this Association. If requested, we would be pleased to meet with DOE representatives to discuss this matter in greater detail.

Very Truly yours,
CIMA
Steven R. Pritzner
Administrator

* *

ROY BISHOP
Director, Office of Energy Conservation
One City Hall Square
Room 813
Boston, Massachusetts 02201

The Boston Office of Energy Conservation was established in September 1980 with a mandate from Mayor Kevin H. White to reduce energy consumption by all City departments, as well as to promote energy conservation across all energy use sectors in the community.

The Office of Energy Conservation believes that we must come to grips with the problems of: a lack of information on energy conservation, a lack of incentives for implementing energy conservation, a lack of skills for performing weatherization tasks, and a lack of financing for energy conservation improvements. Therefore, we have defined our objectives as follows:

- to reduce energy consumption in all sectors, especially the municipal, residential, and small business sectors
- to inform and educate these sectors about the importance of energy conservation and renewable energy resources
- to inform users about existing financial mechanisms and incentives for conservation and to encourage the development of others
- to develop a comprehensive community energy planning and policy process and role.

Currently, our programs in these areas primarily focus on:

- municipal energy projects for the reduction of energy consumption in city buildings, vehicle fleets, and street lighting; and resource recovery, training and education programs
- neighborhood energy projects which focus on encouraging conservation in the rental market; the formation of neighborhood energy committees; and assistance to small businesses
- private sector initiatives which include utility rate case intervention; development of conservation financing programs with local banks; and the establishment of an emergency oil delivery program.

In addition, we maintain an outreach and public information program, as well as a research and planning program which provides information to the staff and other city departments, develops data on energy use, analyzes energy issues in the preparation of energy legislation, and identifies resources for program development.

Energy conservation is a high priority for Boston. In 1980, the City itself spent $32 million on municipal energy consumption -- while the residential sector in Boston spent approximately $350 million for heating, lighting, cooling and transportation. In 1980, our community exported a total of approximately $1 billion for energy. This represents a tremendous drain on our local economy. Conservation, for Boston means more dollars and jobs in the local economy -- while not conserving means higher costs for fewer municipal services. The best case for pursuing energy conservation, for our city and for the nation, is the cost of not following this option.

At a time when energy conservation is of crucial importance to the very survival of cities and regions, it is unfortunate that local and state governments are unable to focus efforts and resources in this area. In Massachusetts, municipalities are being forced to concentrate resources on providing essential services due to the passage of a property tax reform measure which has sharply reduced the revenues the city can rely upon for meeting operating and other costs. Therefore, although energy is of serious interest to Boston, which is concerned with encouraging and implementing energy conservation, we will not be able to devote the level of staff, resources, and attention to this issue as we would like.

It is questionable as to how the federal administration can assure that an adequate amount of attention to conservation be paid while cutting already inadequate conservation and renewable energy programs. The argument is that the market forces of higher energy prices will force many consumers to pay attention to conservation -- however, many may not be able to pay any attention to conservation options by virtue of financial, information, and skills constraints.

Low and moderate income families already consume the least amount of energy. In Roxbury, a predominately low-income Boston neighborhood, the median annual income is $6300 --with annual energy expenditures of between 40% and 50%. These people, as well as many others, simply do not have the cash or skills to invest in conservation -- they are already struggling to keep minimally warm. In addition, it is unlikely that such institutional problems as that of weatherizing the rental market will be solved by higher energy prices alone. Since 73% of Boston's housing is tenant occupied, this group is of major concern to the City. What is needed for the residential and other energy use sectors is information, assistance, training, and financial incentives.

Our office is prepared to attempt to assume a number of the responsibilities that the federal government is virtually abandoning. We plan to provide energy conservation information and assistance to individuals and groups and to work with the private sector to initiate conservation financing programs. However, our priorities will remain in the area of municipal energy conservation -- the economics of budget cuts and inflation force us to focus on energy use by city departments.

It is likely that many of the conservation programs being sharply reduced or discontinued, such as the Conservation and Solar Bank, the Residential Conservation Service, the Weatherization Program, the Schools and Hospitals Program, and the Energy Extension Service -- will leave a vacuum that a local government, or many local governments -- cannot possibly hope to fill. For example, the Schools and Hospials Program has enabled Boston to invest in energy conservation measures in a number of city buildings, as well as to train staff in energy auditing. In 1980, Boston received over $100,000 under this program for energy conservation measures in city facilities. This program has saved Boston a substantial amount of money. Without these funds for energy improvements we would not have been able to do this work because we could not have targeted operating monies into such measures.

In the area of consumer energy conservation program, we believe that an auditing program such as the Residential Conservation Service is essential and should not be eliminated. In Massachusetts, the Residential

Conservation Service is law. However, the budget cutting climate in our state may also endanger this program. The Residential Conservation Service provides a nationwide mandate for energy conservation, while relying upon the private sector as the primary participant. Elimination of this program and the planned Commercial and Apartment Conservation Service will leave a gap that no city or state initiative can fill. The federal committment to conservation that this program has illustrated has been essential to its widespread acceptance and success.

It is difficult to assess the federal government's proper role in this time of transition while holding to the belief that the national government is substantially altering its energy role by greatly reducing state and local conservation programs. The federal government's role is to set an example and be a leader by providing consumers, business, industry, and local governments with needed information, assistance, support, and training. It is impossible for us to succeed at building an energy "capacity" in Boston without the active support of the federal government. We cannot fill the role of helping the consumer, the poor, the elderly, and the business person when we are struggling to initiate and maintain our own energy efficiency programs.

It is neither a cost-effective nor a compassionate energy policy which relies solely on marketplace prices and forces to encourage conservation without providing the incentives that traditional energy sources have received for many years. The transition that we will be experiencing as a result of the federal shift in energy policy will be a painful one.

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ROBERT F. BLANKE
Orange and Rockland Utilities, Inc.
One Blue Hill Plaza
Pearl River, New York 10965

Orange and Rockland Utilities, Inc. has been promoting energy conservation since 1973. Other utilities have sponsored interest-free loans for energy conservation prior to any federal/state mandates. Conservation programs allow the utility industry to maximize existing plant capacity and defer the cost of building new plants. With continued high interest rates, utilities, on their own and without government intervention, will continue to promote energy conservation as a cost effective means of maintaining the lowest possible cost of the commodity they sell.

New York and New Jersey, two states in which we sell our energy, presently have laws requiring the promotion of energy conservation. It certainly would not be politically expedient for anyone to suggest abolishing these laws. Present indications are for expansion of existing programs. New York presently has laws pending which would require totally free residential audits and audits of multi-family residences. The utilities are financing a study of existing residential homes in the state to determine the effect of our conservation program which was started in August 1978. The data from this study can be compared with a pre-1978 study.

The residential market sector will receive most of our attention. Both the commercial and industrial market sector should have enough incentive to effect their own conservation program - more profits. If increased profits don't move this market toward more conservation, legislating laws certainly won't move them in install the measures either. Let us remember that audits don't save energy.

The federal government was the catalyst to start this program and should not be involved in its implementation. Of course, the federal government could provide technical assistance in devising the criteria to be used in calcuating energy savings. This data would only be useful if it were available on a regional basis, indicated savings that were realistic, were compatible with computer programming, and had input from the people who were going to use the data.

Since the real test of this program's effectiveness is how many people installed conservation measures, it would seem reasonable to develop a short questionnaire which could be completed by each state's lead agency indicating the response on a statewide basis. The simpler the report, the higher the acceptance and the greater the probability all parties will respond. Each state should be able to indicate the measures covered, and by comparing one reporting period to another, it would be possible to determine how programs are being expanded.

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BARBARA BROWN
Solar Times, U.K. Correspondent
P.O. Box 56
APO New York, New York 09127

Once again I want to thank the Environmental Protection Agency for providing an avenue and encouragement for a private citizen to participate in an energy policy review. I am adamant about the importance of private citizen participation, taking into account the nature of the problem and the democratic principles upon which our nation is founded. The views I present are my own and not necessarily those of Solar Times.

The scope of the energy problem and the benefits of conservation are still not nationally, or internationally as far as that's concerned, understood. Statistics may now be widely known, but neither public policies or expenditures, nor private lifestyles mirror the understanding of the finite resource of fossil fuel or the political and social implications of energy dependence, or the environmental and economic benefits of people employed to supply safe, sufficient energy and efficient products and processes. There are increasingly more individual examples of this understanding, but energy conservation initiatives need to be on a national/international scale and the rule not the exception.

Actually America's realization of the problem and program initiatives to combat it have been notable, but this is all the more reason not to abandon our commitment - the problem still with us. I am in agreement with the Administration's view that is it time for state and local governments as well as industry to take on more of the commitment, but government program priorities must continue to support the importance of conservation. I disagree with the premise that public spending for conservation buys us little additional security and diverts capital, workers, and initiatives form more productive uses elsewhere in the economy. I'm afraid such thoughts disregard the benefits of conservation (efficiency) that numerous valid studies have shown. It comes down to basic disregard for credible studies and statistics. The thought that the private sector will take upon itself the initiatives to operate efficiently without federal encouragement to do so may eventually hold true, but I don't believe this is the case at the present, nor will it happen as prudently as need be without federal policy priority. The fact is lifestyle changes take time regardless of the amount of directions of incentives. Transition from a quantity to quality lifestyle has not happened yet and adequate cooperation between federal, state, local authorities and the private sector must be achieved first. The adequacy of attention to conservation must come from everyone; no one sector can abandon their commitment.

America's consumption rate, compared to the rest of the world, and America's influence upon world economics justify the precise energy planning we have seen with the creation of the Department of Energy and a myriad of programs. The direction may change from federal to state and local funding and industry and private initiatives, but the need is just as prominent.

Energy is a world problem. Concern for German independence upon a proposed Soviet gas pipeline to Germany, employment possibilities of conservation projects in countries like England where unemployment is being blamed for current riots, hardships of the renewable energy and conservation innovators which postpone or stifle these needed developments, all bring home the need for national as well as international energy policy coordination.

The adequacy of attention to conservation should include assessing the social and environmental benefits of conservation, not ignoring the world energy and economic situation. Unemployment is a world problem and so is energy. People worldwide are recognizing the opportunity to help solve thse two very big problems. Conservation and renewable energy initiatives do create jobs. (Giving everyone the benefit of the doubt of being aware of the numerous supportive American studies, let me list to British studies that concur with the job creation potential of conservation and renewables:) Energy Options and Employment, by the Center for Alternative Industrial and Technological Systems, North East London Polytechnic, 1979; and Earthworks: Environmental Approaches to Employment Creation, by Edward B. Barbier, Friends of the Earth Ltd., 1981.

Many federal officials seem to think that employment has no business being a criterion for energy policy formulation, but I believe they are ignoring the fact that no segment of society functions in isolation. I agree with the Environmentalists for Full Employment belief that any plan for economic revitalization include a major investment in energy conservation and renewable; that such an investment would help meet much of our energy needs, stimulate the economy and enhance productivity, and create large numbers of jobs.

I've been an Air Force dependent wife for 14 years, a resident of military family housing for over 8 years, and involved with conservation and renewable pro-initiatives since 1977, including the Military Family Housing Energy Conservation Project since 1979. I can say, with what I believe is valid insight, that adequate attention is not being given to energy conservation by the Department of Defense, specifically military family housing. Energy conservation facility management practices have been forthcoming, but few initiatives have been taken to communicate conservation adequately to family housing residents. Military jobs coud be created to present conservation as adequately as fire prevention is presented. With the increased DOD budget, I hope to see priority given to conservation and renewables. I think an increased awareness of the benefits of conservation for the military community would perpetuate a better understanding of the security benefits of conservation.

Let me give one final example of a security connection as well as the importance of international cooperation in developing conservation priorities. Recently a journalist for a major British newspaper warned me that many of his anti-nuclear associates would not want to work with me on pro-conservation and renewable projects, not because they didn't agree with the importance of such initiatives, but because I am an American! His associates did not want the American military in the U.K. and were even questioning the benefits of the NATO alliance. The journalist covers Central America.

Thank you for the opportunity to present my views. If anyone has questions about any of my testimony, please feel free to contact me.

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ART CANTRALL
Acting Administrator
Economic Opportunity Division
State of Washington
Planning and Community Affairs Agency
400 Capitol Center Building
Olympia, Washington 98504

Our agency administers the weatherization and Low Income Energy Assistance Program (LIEAP) so our remarks will be confined to those two areas. Within the last year, weatherization has truly become an effective and efficient program in the state of Washington. Up until December 1980, the weatherization program was continuing to increase production to a point that over 600 dwellings per month were being completed. At the same time technical expertise had increased to a degree where our crews were able to do an effective job of weatherizing nearly any type of dwelling. From an analysis of the energy savings achieved, the low income weatherization program has become cost-effective in terms of the energy costs for the recipient. From our view, which is shared by our Governor, weatherization is certainly a worthwhile program that is worthy of being continued.

LIEAP provides a very vital service to our low income citizens. The program has gone quite well, specifically when compared to similar programs in the past. Local activities provide the important function of identifying those individuals who quality for LIEAP but are not receiving some other form of public assistance.

In response to your specific questions the following information is provided:

1) Funding mechanisms and structural issues:

   a. Weatherization funding needs to be specifically identified. If weatherization is authorized but rolled into emergency energy assistance, the immediate priorities (emergency assistance) in light of limited funds will take precedence over the long range weatherization measures. We would like to see a specific percentage that must be dedicated to weatherization with the flexibility to use additional funds if the individual state so chooses.

   b. We have been examining this issue in some detail. Washington currently works through 4 local governments, 18 community action agencies. For the most part, these agencies remain the best suited to continue the weatherization program in their local areas. Some modifications may be necessary such as a careful evaluation of required administrative costs, but the expertise, outreach capabilities etc. would be preserved.

   c. Unless major policy operation changes result, transferring the program should not be much of a problem. However, if weatherization funds are not fence, a new agency's priorities may reduce the program substantially.

2) Implementation issues:

   a. Under Department of Energy property guidelines, the tools and equipment revert of the grantee (state) as long as they are used for weatherization purposes. It is our intention to transfer equipment, tools, and in some cases, people to whomever will continue low income weatherization. The procedures to accomplish this transfer are in place and have been used in several instances.

   b. Yes. By coordinating LIEAP and weatherization efforts, the energy cost burden is reduced for a long term.

   c. We feel the current levels of funding are optimum. Some additional flexibility to allow certain additional funds for repairs would be desirable. A lesser investment would not achieve the long term energy savings that the program now accomplishes.

d. Although CETA has contributed significantly to weatherization, the program can be maintained on a cost effective basis without CETA support. If CETA support does become available, it could be used effectively. Several programs have operated in Washington without CETA. Our experience has been the the job can still be done without an inordinant increase in labor costs when you consider the number of homes weatherized during a specified time has increased compared to homes completed by CETA personnel during the same time frame.

If you want any other specific information or statistics, please call me at (206) 753-4979.

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CLIFFORD P. CASE, III
President
National Recycling Coalition, Inc.
45 Rockefeller Plaza
Room 2350
New York, New York 10020

My name is Clifford P. Case, III. I am President of the National Recyclying Coalition, a nationwide grouping of organizations and individuals in 45 states, dedicated to the increased recyclying and conservation of all of our resources. I am submitting this statement on behalf of the Coalition to assist EPA in its obligation under Section 11 of the Federal Non-Nuclear Energy Research and Development Act to analyze the adequacy of attention to energy conservation in the United States, particularly by the federal government.

The Coalition believes this hearing is particularly timely, since the significance of energy conservation as an important element of governmental policy is under increasing attack at precisely the time when spiraling costs of both imported energy and new energy sources should be forcing all of us to pay more, rather than less, attention to energy conservation.

Naturally, we at the National Recycling Coalition want to promote energy conservation through greater recycling of wastes. The potential for saving energy in this field is truly immense, and as of yet only barely tapped. Most people are aware that use of scrap rather than virgin materials in manufacturing products saves energy, but they are generally unaware of the extent to which these energy savings can mount up. For example, if recycling of steel increased by one-half and recycling of paper tripled, energy equal to 500,000 barrels of oil a day would be saved. At current world oil prices, these savings would be worth approximately $6 billion each year! This amount of energy is also the equivalent of the output of 14 nuclear power plants.

Naturally, this kind of major commitment to increased recyclying could not be achieved overnight, and the capital costs would be significant, but it seems clear to us that these inceased costs would be far outweighed by the benefits to society which would accrue, both financial and non-financial, in terms of enhancement of our national security through less reliance upon imports, reduction of waste and pollution, and creation of increased job opportunities within the recycling industry, particularly in our depressed urban areas.

In any such major shift to recycling, a number of parties must participate. Industrial participation is, of course, pre-eminent, since it is the basic industries of the United States which must make the investments necessary to permit them to use greatly increased quantities of scrap, but government has a very significant role to play as well--by documenting the benefits of a national recycling policy; providing incentives and tax benefits to industry to stimulate the necessary investment in greater recycling capacity; promoting waste disposal policies at the local level which will assist in supplying the necessary raw materials for such a recycling increase; and stimulating the market for recycled products by appropriate purchasing policies at all levels.

It is with great regret that we must state that the level of performance of the government in this area has been abysmal. The federal Department of Energy has shown little or no interest in documenting through reliable studies the extent of energy conservation possible through recycling, or in investigating the necessary capital investment costs to achieve such an increase. In fixing targets for the use of scrap in energy-intensive industries, DOE completely reneged on its statutory responsibilities, fixing goals which enshrined the status quo in the face of a variety of economic and other trends which will of necessity make increased recycling both economic as well as attractive from a policy standpoint. EPA has failed in its statutory responsibility to issue guidelines for federal procurement of recycled products, four years after the statute requiring issuance of those guidelines, the Resource Conservation and Recovery Act, was passed. Both DOE and EPA have fostered local waste disposal policies which emphasize incinerating garbage, thereby making recovery of materials difficult-in the case of metals and glass--or impossible--in the case of paper. What increases in recycling have come about have been due to local initiatives carried out with little or no assistance, either technical or financial, from higher levels of government.

We believe the facts speak for themselves. Total reliance on the production of new energy and importation of energy from abroad are a perfect blueprint for disaster insofar as the United States is concerned. Energy conservation through recycling represents an almost untapped resource in this country, when the actuality of industrial recycling is compared with its potential. We urge EPA to at once establish a program to document the extent of the benefits possible through recycling and provide reasonable technical and financial assistance to those parties who are working and will continue to work to make increased recycling a reality.

For further information: Clifford P. Case, III, President, the National Recycling Coalition, Inc., 45 Rockefeller Plaza, Room 2350, New York, New York 10111. Telephone (212) 765-1054.

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EDITH CHASE
Energy Chair
League of Women Voters of Ohio
65 South Fourth Street
Columbus, Ohio 43215

The League of Women Voters of Ohio has studied energy since 1974 and believes that top priority must be given to energy conservation and renewable resources. The EPA Issue Paper summarized a great deal of valuable information. Because the Reagan administration's National Energy Plan III has just been released and I do not have a copy, I would like to comment briefly on the March 1981 DOE statements on pages 4-5 of this EPA paper.

There is no goal nor statement of purpose given. The League recommends that not only as a responsible member of the world community but also in the national interest, the United States must make a significant and progressive reduction in its energy growth rate. To achieve this goal, the nation must develop and implement energy strategies that--while taking account of differences in the needs and resources of states and regions--give precedence to the national good. In developing national energy strategies, the federal government should spread costs and benefits (environmental, social, economic, health) as equitably as possible. In keeping with this criterion, states and regions should take steps to maximize conservation and to utilize their indigenous, renewable resources. There should be assistance for low-income individuals, when changes would bear unduly on the poor.

We certainly agree that "the government's role is to establish sound public policies, based on economic principles, national security concerns, and a due regard for environmental values, so that individuals and firms in the private sector have the incentives to produce and conserve energy efficiently, consistent with the national interest."

"The nation's energy problems will be solved primarily by the American people themselves--by consumers, workers, managers, inventors and investors in the private sector." Yes, but these actions will be within the framework set up by the government, whatever energy policies are established. It is also important to recognize that the government is a major consumer of energy and, as such, must set a good example and take actions that are being requested of all other consumers. The first step should be an inventory of energy consumption and energy conservation measures being taken by each department of the federal government and an analysis of procurement policies. This report should be published and steps taken to conserve energy on the basis of the findings.

_If_ "The government's role is _not_ to select and promote favored sources of energy," then we question the insistence on the Clinch River Breeder Reactor project--another $250 million requested in this budget, eventually $3 billion or more. Yet the electricity it generates will be so expensive that it will have to be sold at far below cost. (Wall Street Journal, 7-1781) In addition, spending for nuclear fission for FY 1981 totals $2.1 billion, an extra $500 million over the proposed budget for the Nuclear Regulatory Commission for additional inspection as a result of Three Mile Island. In addition, annual federal government subsidies in support of routine energy supplies totalled over $6 billion in 1977, according to Robert H. Williams of Princeton University (see attached table). Subsidies included activities such as low interest appropriations plus tax exemptions for hydroelectric and transmission facilities, uranium enrichment services, liberalized depreciation for privately-owned utilities, tax exemption for publicly-owned utilities, and depletion allowances for oil and gas (Energy Conservation Coalition _Bulletin_, June/July 1981). If government subsidies are to be withdrawn for energy conservation programs, then the other subsidies should also be eliminated. Unless federal subsidies are removed from other sources of energy, this experiment of delegating all responsibility and funding for energy conservation to state and local governments is obviously an experiment designed to fall.

Energy conservation includes energy efficiency or energy productivity and refers to getting from the energy we use, not to a back-to-the-caves reduction in amenities. It means more efficient and durable automobiles, buildings and appliances; greater emphasis by industry on the cogeneration of electricity and process steam, and on the development of new, more efficent industrial processes; and a major focus on recycling and resource recovery. The good news is that, if we take energy productivity seriously we can have a healthy, expanding economy in the coming decades with energy growth far below that predicted only a few years ago. The Harvard Business School's _Energy Future_ (1980) points out that increases in the productive efficiency of energy possible with today's technology could allow the U.S. economy to operate on 30 to 40 percent less energy than it now does, and still enjoy the same or an even higher standard of living. "The cost of conservation energy is very competitive with other energy sources," said Harvard's Daniel Yergin. "Conservation may well be the cheapest, safest, most productive energy alternative readily available in large amounts.... And contrary to the conventional wisdom, conservation can stimulate innovation, employment, and economic growth. Since the United States uses a third of all the oil used in the world every day, major reduction in U.S. demand would have a major impact on the international markets."

With the cooperation of all levels of government, business, industry and an informed public on a vigorous program of energy conservation, everyone will benefit from the wise use of our energy resources.

GENERAL QUESTIONS

_Q_. How are private firms, state governments, and local agencies preparing to assume their new responsibilities?

FIGURE 1

Meanwhile, on the Supply Side

The following estimate of annual federal government subsidies in support of routine energy supplies in 1977 was prepared by Robert H. Williams of Princeton University. It provides a useful benchmark for measuring progress, or lack of progress, toward a free energy market.

Federal Activities	(million 1977 dollars)
Low interest appropriations plus tax exemptions for hydroelectric and transmission facilities	290
Uranium enrichment services	180
Nuclear Regulatory Commission regulatory costs	146
Privately-Owned Utilities	
Liberalized depreciation for Federal tax purposes	2000
Publicly-Owned Utilities	
Exemption from federal income taxes	
• Tennessee Valley Authority (TVA)	130
• State power authorities and municipal utilities	80
• Rural Electric Administration (REA)	294
Tax-exempt bond subsidies	260
Loans and loan guarantees provided by REA	260
Oil and Gas Industries	
Percentage depletion allowance on Federal taxes	
• Oil	550
• Gas	1150
Expensing of intangible exploration and development costs for Federal tax purposes	
• Oil	740
• Gas	460
TOTAL	6540

From the Energy Conservation Bulletin, June/July 1981

A. Private firms: Private firms have, of necessity, taken many steps to conserve energy during the last several years. Private reserch results and expertise must be kept in-house rather than shared with other firms in order to keep a competitive advantage. While large firms may have the technical staff, small firms would need technical assistance. Many energy conservation/energy efficiency measures require capital expenditures and must compete in corporate budgets with other projects when the prime interest rate hovers around 20%. Trade associations are a possibility; I have no information regarding their activities.

Utilities: In some sections of the country, forward-looking utilities have recognized that increasing costs of construction mean that new power plants are more expensive than energy conservation/energy efficiency measures as a means of meeting energy needs (e.g., New England, California). For example, "Duke Power will put even more emphasis on its peak load management program and less on financing power plant construction. 'The less they need to finance, the better for the company and the stockholders,' M. Liu said." (Wall Street Journal, 2-25-81).

On the other hand, James McCarroll, manager, Health Effects Program, Electric Power Research Institute, comments: "Conservation and energy shortfalls can have tragic results for the very old and very young. Cutting the thermostat back a relatively few degrees can especially in the elderly, produce hypothermia." (Science, July 10, 1981, p. 197) EPRI, under the new federal policies, should look far beyond turning the thermostat down if the private sector is to assume their new responsibilities.

State governments: States are expected to play a larger role in energy regulation and in devising energy programs for low-income and elerly households in the next few years. Economic conditions in the state of Ohio, however, have resulted in a budget crunch. Legislators passed a four-month interim budget in July after they failed to agree on a budget for the biennium. In spite of inflation, the new budget cuts existing levels of state spending by 3 percent except for schools and welfare (Kent Record-Courier, 7-2-81). There is no room in the budget to pick up new programs, such as energy conservation, unless existing programs are cut or taxes increased, both politically difficult tasks. In addition, two bills have been introduced to eliminate the Ohio Department of Energy and scatter the functions among various other agencies. The League objected to this because of the increased need to coordinate efforts to deal with energy problems and to promote the efficient utilization of energy. Whether or not these bills are enacted, there is little leadership at the state level to promote energy conservation.

The Ohio Department of Energy has an energy audit program, prepares an annual energy conservation plan (but never evaluates its results), and carries out other federally mandated programs, mostly with federal funds. When federal support of a used oil recovery program was withdrawn, it became a voluntary program in Ohio. The task force representing a variety of interests recommended support but no legislation is being introduced that requires any new funding.

Ohio's Energy Credits Program, begun on a demonstration basis in 1977 and now permanent, provides 25 to 30 percent discounts on winter heating bills for low-income elderly or disabled utility company customers through vendor-lines-of-credit or onetime cash payments of $125 for retail fuel dealer customers. Last winter some 350,000 households statewide received benefits from the program, which is funded by state appropriation.

Such programs are an important "safety net" but are a continuing expense. On the other hand, weatherization programs, increasingly effective, result in a significant decrease in energy consumption and increase the ability of low-income people and the elderly to become self-reliant. Federal funding for weatherization is being withdrawn, to be included in block grants with less total dollars. Said Charles Royer, Mayor of Seattle, "The real point is that we are going to get local responsibility with 25 percent less money and no practical means to replace it with local revenues." (Wall Street Journal, 7-16-81).

Neither Congress nor the market place has yet come up with solutions to the problem of weatherization of rental housing: why should the landlord pay for energy conservation measures when the tenant pays for the utilities?

Local governments: Many options are available for local governments to encourage energy conservation, such as building and zoning codes, audit and retrofit of public buildings, public education, transit investment, carpool matching, and demonstation projects for neighborhoods, businesses and industry. Some of the obstacles to carrying out these programs include lack of funds, lack of expertise, lack of public awareness, and resistance to change. A phased rather than sudden withdrawal of federal support and assistance would facilitate the turnover of responsibility to local governments.

Q. Which activities will get priority from public and private organizations and what will be the consequence?

A. If present trends continue, energy supply activities will far overshadow energy activities, on the part of both public and private sectors. The energy supply industry is well established and is populated by many large firms capable of doing some research and development. The energy efficiency industry is in an embryonic state of development, so that private sector research and development capabilities are especially limited. In the building construction industry, for example, technological innovation is particularly difficult because the industry is fragmented and tradition-oriented. The federal energy efficiency research and development effort is far from adequate today. A federal program with anything more than modest cuts at this time would have a devastating long-term impact on U.S. economy.

The opportunities for technological innovation in energy conservation are far greater than in the area of new supply. The problem of runaway energy inflation can be greatly mitigated if the opportunities for cost-effective energy conservation investments are exploited. The reason for this is that it is possible to achieve a high level of fuel savings through energy efficiency improvements at much less cost than is required to provide energy from new sources of energy supply. The high cost for new energy supplies reflects the skyrocketing costs for the capital needed to exploit low grade energy resource alternatives to low-cost oil and gas. Because of these rising capital costs and government subsidies for energy supply expansion, there has been a continuing dramatic shift of capital resources in our economy to the energy supply sector. This ongoing shift in capital resources contributes to the scarcity of capital for nonenergy investments, which are needed for industrial renewal. (NRDC, Amicus Journal, Summer 1981, p. 10-12).

Consequences: See "State and Local Conservation Activities, #2.

Q. Have any new initiatives or opportunities been created as a result of the shift in federal energy conservation programs?

A. The opportunities have been there all along. The question of what gets done depends in large measure on the resources devoted to the various options. Funding, attention and other resources are rather unbalanced at this time and becoming more so with abrupt federal rescission of FY 1981 funds and drastic reductions in FY 1982 conservation programs.

Q. What is the federal government's proper role in this period of transition?

A. To set long-term goals and policies;
to exert leadership;
to monitor and evaluate results, including costs to society and national security;
to continue research and development on energy-efficient technologies;
to provide technical assistance to state and local governments, business, individuals;
to monitor interstate and international impacts and recommend actions;
to revise federal procurement policies and other measures to conserve energy;
to regulate and manage wastes from energy production;
to set mandatory standards for energy conservation;
to use tax incentives, tax disincentives and loan guarantees to encourage business, industry and individual consumer to conserve energy;
to provide for and encourage citizen participation in decision making.

Federal standards and compliance timetables that protect the environment should not be relaxed in pursuit of national energy goals.

Q. How should the federal government evaluate and monitor the effects of its new energy policies and program changes?

A. Detailed data collection programs, with quality assurance of data, must be continued and/or initiated on energy usage, energy supply and costs; import/export data; research and development by public and private sectors; effects on environment and public health; world energy usage and economic conditions. In addition, hold public hearings and ask for citizens to comment at regular intervals.

It will be important to be able to compare the effect of the changed policies on national security and international tensions and in meeting the needs of the country and its citizens in an equitable manner. When does the Reagan administration plan to addres the issue of renewable resources?

STATE AND LOCAL CONSERVATION ACTIVITIES

1. Which of the functions formerly performed by federally funded programs are likely to be picked up by the state energy offices? By cities and counties? By the private sector?

A. Energy Impact Assistance: The impact of strip mining of coal is a continuing problem in Ohio, not a sudden new development. The state law was superseded by the federal law for restoration and reclamation. It is extremely important that reclamation be firmly enforced as strip mining proceeds in order to prevent the devastation, erosion and sedimentation and acid mine drainage of the abandoned lands in the state. Other than that, local governments will be left to cope as best they can.

Schools and hospitals program: We support continuance of this program, as budgeted. The emphasis in Ohio is to keep schools open. State Senator Marcus Roberto reports that, without additional revenue, more than 250 of Ohio's 615 school districts will likely be unable to complete their calendar year in the black. There is only so much that can be cut out of a school program before it becomes substandard. (Kent Record Courier, 6-27-81). Under these circumstances even important maintenance and energy conservation projects will be deferred by schools.

Weatherization Assistance Program: In view of tight state finances, any weatherization programs will be left to local governments to find funds out of reduced block grants. See page 3.

State Energy Conservation Program: Although dedicated Ohio Department of Energy (ODOE) staff members have tried to follow state and federal laws for State Energy Conservation Programs, the lack of support and leadership by top state political leaders has rendered efforts largely ineffective. Although several public hearings wee scheduled in April on the 1981 proposed state energy conservation plan, I was unable to get a copy in order to prepare comments. The public, reflecting such attitudes, has greeted these efforts with a large ho-hum. Coordination with other state agencies has been limited and measures required under state and federal laws have been neglected, such as changes in procurement policies and evaluation of utility rate structure.

On the other hand, ODOE's request for proposals under the federally funded energy conservation program for innovative public education, transportation, industry, local government and other projects has met with enthusiastic response. At the public meeting in Cleveland on July 7, 43 people were present to get information on how to apply; two other meetings were held (Cincinnati, Columbus); deadline for proposals is August 21, 1981. If federal funding is dropped, the state is not expected to continue this program. Local governments and the private sector would focus on their own short-term needs, as limited resources permit.

Energy Extension Service: Although personalized information and technical assistance to individuals, small businesses and local governments can pay big dividends in terms of energy and dollar savings, I would not expect this program to receive state or local government funding. As an example, I have been a member of the task force for two years for the Kent Solar Project, funded by Argonne National Laboratory. The project's basic goal is to develop a plan for conservation of energy and use of alternate energy sources in Kent. The project has been completed and the task force is continuing to meet on a voluntary basis to try to implement recommendations. One important recommendation, to establish a Kent Energy Office, a focal point to continue efforts, may not survive, a result of the effects of inflation and dwindling tax base on the city budget.

Emergency Energy Conservation Planning: I would expect the state to maintain a minimum effort.

Residential Conservation Service: Under the National Energy Conservation Act approved by Congress in 1979, all large and some small utility companies are required to help customers decide what improvements could help customers have energy and money. While Ohio utilities have had two years to make plans for the startup of this program on July 1, 1981, they have requested and received extensions for mailing notices of availability of audits. Ohio Edison Co. plans to start a pilot program in late August. Notices to all customers should be completed by the end of the year, according to a company spokesman. East Ohio Gas Co. also received a 60-day extension; customers are to be sent notices about the project in monthly cycles until all customers are served. Both plan to charge $15. (Akron Beacon-Journal, 7-17-81).

2. What will be the effects if a state decides to phase out its energy office? Which activities will be discontinued?

A. Effects would include fragmentation of energy conservation efforts, lack of coordination, lack of public education and technical assistance, continued unemployment, increased energy expenditures by state and local governments and the private sector, preempting capital investment and operating funds for other, more productive, uses; reduction in economic vitality.

I would expect that discontinued activities would include all of these listed above except for a minimal effort on emergency planning.

3. How can local governments transfer the state experience and resources to the development and implementation of local programs?

A. In general, the energy audit program has been very useful. Implementation will depend on local budgets, priorities set in block grants, and citizen initiatives, all at short notice.

4. How will the 21 states that have biennial budgets adapt to the new federal priorities? What is the consequence of their operating on a biennial budget likely to have on this ajustment?

A. Ohio has a biennial budget but was unable to agree on a budget for this fiscal year. Therefore the General Assembly passed an interim budget for four months. Legislators will meet again in September. Thus, the problem will not be the timing but revenue shortfall, because of economic conditions.

5. How can information, experience and resources be shared regionally after the discontinuation of the DOE Regional Offices?

A. Can agreement be worked out before discontinuation for an annual get-together of representatives from the states in each region? Otherwise, newsletters, computer information systems, circulating libraries, circuit riders and liaison personnel, regional or national conferences and meetings.

6. Can alternative funding sources be found for conservation activities?

A. The private sector presents the most opportunities. Carefully designed federal and state tax incentives, disincentives, and loan guarantees would encourage business, industry and individual consumers to conserve energy and to shift toward the development and use of renewable resources. With leadership, planning and technical assistance from the federal and state government, the private sector, especially utilities, can make long-range plans to meet real energy needs (not inflated demand) in the most cost-effective way. Energy conservation has been repeatedly shown to be the most cost-effective means to meet needs if life-cycle costing is considered and if federal subsidies and other distortions (e.g., declining block rates for electricity) are removed. The marketplace could then bring economically efficient decisions.

ISSUES FOR THE 1981 SECTION 11 REVIEW

1. Funding mechanisms and structural issues

a. In light of the proposed changes, how can the nation maintain an effective low-income weatherization program?

A. The League strongly advocates weatherization as a means of cutting energy costs. Alternatives: funds from a very small percentage of the Windfall Profits Tax; mandatory federal standards for energy conservation; possible local mandatory requirements for energy conservation, as part of a comprehensive energy plan; strongly encourage public utilities to set up their own loan programs for weatherization, repaid in the customer's regular bill and in reduced capital requirements for expensive facilities that won't have to be built. Encourage formation of local weatherization coops, with members contributing labor, materials or money. Fund the Solar and Conservation Bank as approved by Congress.

b. If weatherization is transferred into HUD Community Development Block Grant, what agencies would be effective sponsors at the community level?

A. Community Action Agencies, local groups.

c. How can problems involved in transferring the program from one agency to another be minimized?

A. Provide transition funding so that personnel from the new agency may work with the existing agency before transfer of the program; training programs for personnel in the new agency, including hands-on training; transfers of a few key personnel from the old to the new agency.

2. Implementation issues

a. If a state decides to phase out Community Action Agencies, how can their resources and experience be transferred to the new weatherization sponsor?

A. Same as 1.c.

b. Should LIEAP funds be utilized for weatherization? How can the LIEAP program coordinate its activities with the weatherization program at the state and/or local level?

A. LIEAP funds could be used for weatherization. However, if totals are to be cut by 25%, this will not be a significant source.

c. What is the most equitable and cost-effective weatherization program? Should the federal government continue to provide substantial assistance ($1000-200/unit) to a relative small number of houses? Or, should the program be restructured to provide minimal weatherization ($200-300) to a larger number of units?

A. Public education on energy conservation must be on an essential element of any program. Criteria for selection of houses should be evaluated. I believe that substantial assistance should be provided to a relatively small number of houses, calculating pay-back. A rotary fund should be set up; recipients of this assistance would pay what they were able, knowing that all funds in this account would be used to help more people. Public participation is essential; people for whom community action programs are designed should be involved in the planning and implementation of those programs.

d. How can CETA workers be retained in the weatherization industry?

A. A strong energy conservation program is labor intensive. Employment would increase, with job openings for those who have skills in weatherization.

SUNSET PROVISIONS

1. What information is necessary to enable the federal government to monitor and evaluate the effects of changes in energy policy and conservation programs? For example, should DOE monitor whether state and local agencies continue important conservation activities? Whether private firms continue conservation R&D? Whether homeowners continue to invest in conservation improvements?

A. Yes, those items listed. Also, information should be compiled on energy consumption by category (residential, commercial, industry, transportation, etc.), and per capita energy consumption. Detailed information should also be compiled on the energy consumed by the federal government, by category, for several years. As a major consumer of energy, the federal government should set and meet energy conservation goals.

2. What types of regular monitoring and special studies would be most appropriate for obtaining this information? —

3. How can this information be gathered without placing a major paperwork burden on respondent organizations?

A. Much of this information is probably already collected but may not be in a form compatible with the system used. Quality assurance of data and compatibility would reduce paperwork.

4. Regarding the Sunset review, what are the most important questions in the Sunset Provisions? What would constitute adequate responses to these questions? What types of analyses should the response contain? What types of data should be included? What level of detail is needed?

A. All of the questions are useful. In my opinion, the most important are:

2) an identification of the objectives intended for the program and the problem or need which the program was intended to address;

— The purpose must be clear.

4) an assessment of alternative methods of achieving the purposes of the program;

— Often a weak link, with serious omissions in identifying alternatives. Nonstructural alternatives sometimes are much less costly than structural alternatives.

6) an assessment of the degree to which the original objectives of the program have been achieved ...

-- To measure results.

10) an assessment of the impact of the program on the nation's health and safety;

-- Include social, economic, energy and environmental effects, including secondary impacts. I would also suggest evaluating effects on employment.

13) an analysis of the services which could be provided and performance which could be achieved if the program were continued at a level less than, equal to, or greater than the existing level;

-- Useful for the budget process.

I see this review as a broad overview and assessment, very important on a periodic basis. It should not get bogged down in detail. The answer to each Sunset question could be limited to two pieces of paper, with details in appendices. I recommend adding question #15: Findings and conclusions based on the above review.

Thank you for this opportunity to express our views.

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ALBERT B. CSONKA
President
Micro-Carburetor Corporation
25 Rano Street
Buffalo, New York 14207

The Micro-Carburetor Corporation is a pure research and development organization, dealing only with fuel-saving and pollution-reducing carburetors. The company owns the patent rights of the Micro-Carburetor. Upon a small DOE contract and a still smaller N.Y. State contract, we developed two Micro-Carburetor prototypes for two large 8-cylinder engines, as prescribed by the contracts.

The Jet Propulsion Laboratory, Pasadena, CA performed a year-long testing program with the Micro-Carburetor. According to their interim report, prepared for the Energy Department, our caburetor saves 12 percent fuel and increases the car's mileage by 13 percent. Their final report will be sent to DOE in July 1981. This report will confirm the mentioned excellent savings. We are convinced that with some more experiments we could increase the fuel-saving to at least 15 percent and further reduce the emission figures.

If Micro-Carburetors were in general use, our crude-oil imports could be reduced by over one-million barrels daily. This means that with the present oil prices, our trade-deficit would be reduced by 12-billion dollars yearly. This savings would greatly reduce the inflation.

During our development work, U.S. carmakers had to change to small cars that use four-cylinder engines. It is in the country's most urgent interest to make these cars as fuel-efficient as possible. Properly developed Micro-Carburetors can help do that.

In 1980, all U.S. carmakers had huge losses thus, we cannot expect them to invest money in developing Micro-Caruretors for their small cars, because the Micro-Carburetor was not invented by them.

For this reason, it is very important that the Government grants the necessary amount for the development of Micro-Carburetor prototypes for all American made cars as soon as possible.

We also have a second invention that further increases the fuel-saving of the Micro-Carburetor by an additonal ten percent and reduces the NOx emissions by an additional 30 percent. We were just informed by our patent attorneys that the U.S. patent office authorized a patent for this invention, that will be issued soon.

During the last four years we experienced very little interest from DOE to assist the development of our fuel-saving carburetors. We expect that the present Government will urgently remedy this fault and will grant the necessary assistance for performing our development program which is of vital interest to the country.

If this were denied, we would be forced to sell our inventions to the foreign carmakers. This would represent a fatal blow, from which we would like to spare the U.S. auto-industry.

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MIKE DEKALB
Energy Planner, Lincoln City -
Lancaster County Planning Department
555 South 10th Street
Lincoln, Nebraska 68508

In reference to the staff working paper for the third national Energy Plan-Parts I, II and III appear to be well done.

PART IV New Views of Energy

Policy (Page 10 & 11) Deserves some comment.

- The second principle states that energy policy should be based on "economic principles, national security concerns, and a due regard for environmental values". This is far too narrow a base for national energy.

- The third principle states that "government is not to select and promote favored sources of energy". This should apply equally to all energy sources and technology regardless of expenses. Also, some technologies have received substantial government subsidies and under-writing over time - those which have not shall be equalized for balanced economics to work.

- The fifth principle states "public spending should not be used to subsidize domestic energy production and diverts capital..." As noted above some subsidies only equalize previous actions built in to some technologies. Conservation has been documented as having the biggest impact per dollar spent in the short run. Provisions should be made to assist conversion to more energy efficient end uses as front-end cost and adequate public knowledge represent substantial barriers to improved efficiency. Specific attention should be given to non-biased information sources.
- The sixth principle states "...eliminating controls on oil which discourages the private sector from dealing with disruptions effectively..." while an accurate statement as far as it goes, what protection remains to ensure the harvest comes in or public safety vehicles have fuel to run?

The "New Views of Energy Policy" presents many valid points - however, they should be expanded and tailored to present a comprehensive and more balanced approach to national energy policy.

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MARY DURHAM
County Energy Resources Coordinator
The Legislature of Rockland County
Office of the Chairman
County Office Building
New York, New York 10956

Various agencies in the Country administrator different energy - related programs. They have been contacted to reply directly concerning their specific projects.

The Energy Department has been mainly involved in promoting energy efficiency in building operations. This has included participation in the DOE program for Schools and Hospitals. The County matched federal funds for a $200,000 technical assistance program of in-depth energy studies of 59 of its buildings. The studies pointed up ways in which the County could save money on operations and recommended energy conservation measures including expected savings and paybacks. $40,000 has been awarded in the second phase to be matched with County funds to implement some of the recommended procedures at the Community College and the Health Complex.

Signficant savings have already been realized, and implementation is expected to show further savings or cost avoidance in energy consumption. Monitoring of the last 3 years of energy use data shows savings of from 3% to 33% in County buildings. Expected annual savings after implementation are forecast to be in excess of the total cost of the program. If this program could be expanded to include monies for implementation of energy conservation measures for buildings owned by local governments and public care institutions as well as schools and hospitals, it would be even more effective in promoting energy conservation. The Energy Department has offered help to villages and town and public care institutions in the County, but there is no money available for them to be able to implement the energy conservation measures recommended in the technical assistance studies.

The Energy Department, together with the Construction Office, is drawing up a 3-year budget for County legislative approval. Work will be done based on cost, estimated savings, and payback for each recommended energy conservation measure. Those measures requiring little money will be implemented year by year. Consumption data monitored and tied in with weather data to see if savings are actually being realized. If so, energy measures with greater than 3-year paybacks will also be considered for capital funding.

The Energy Office and the Construction Office work closely together to promote energy efficiency in building retrofits and in the design of new buildings. Most older County buildings were constructed with construction costs as the paramount concern. New buildings will be constructed with an eye to operating costs as well.

The County has also participated in the New York State program regarding lighting standards for public buildings. Buildings are in compliance with the recommended standard, and part of the savings realized so far is because of reduced lighting loads. In this lighting program, as well as in the School's and Hospitals program, the County Energy Office has enjoyed great cooperation with the State Energy Office.

Rockland County has an annual energy budget in excess of two million dollars. Participation in the above-mentioned programs has helped us lower the cost of the government to the taxpayer. The costs of the programs are recouped in savings or cost avoidance in a relatively short time. Conservation still remains the lowest-cost method of promoting energy savings. It is the main thrust of the Energy Department's program.

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JOHN V. FASHING
Executive Assistant
to the General Manager
Department of Water and Power
111 North Hope Street
Box 111
Los Angeles, California 90051

The Los Angeles Department of Water and Power (DWP) is the largest municipally owned utility in the country, serving more than 1,500,000 electric and 600,000 water customers. DWP is a locally regulated utility governed by a Board of Water and Power Commissioners, in accordance with the Los Angeles City Charter. As a locally regulated utility in the state of California, our Board exercises full authority over all DWP activities including its conservation programs.

DWP is pleased to provide input to the Federal Energy Conservation Program because we believe Los Angeles is an excellent example of how nonmandatory conservation programs (tailored to local needs) combined with appropriate pricing mechanisms have significantly reduced the use of electrical energy on our system.

During the 1950s and 1960s, the annual electrical growth rate in Los Angeles averaged 7%. Today, we are projecting an average annual growth of 1.5% through 1990.

The DWP load forecast for 1980 projected total system sales of 17,704 gigawatt hours; actual sales were 17,556. This represents an almost 2% reduction in energy usage from 1979. During the same period, the estimated real gross regional product increased by 4.1% and the estimated gross private investment for the region increased by 9.2% (see attached chart). These estimated figures are in contrast to the 1980 economic growth in California and illustrate that there has been substantial growth in the commercial sector of the economy continues strong and vibrant in Southern California, energy sales are not locked to the same rate of growth. The Department believes that this diversion of trends is a result of the real price elasticity of energy and the conservation programs provided by the DWP.

As part of the realization that energy should be priced at its real cost, the Department, in 1978, completely restructured its rate schedule to comply with the principal of cost of service. The new rate structure eliminated volume discounts and declining block rates, both of which, in effect, promoted excessive use of electrical energy. The Department was one of the nations first utilities to establish cost of service rate schedules.

The residential sector comprises less than 30% of our total load and the most productive energy conservation programs are aimed primarily at all-electric customers. There are two types of programs in the residential sector. The first is the RCS program mandated by the federal government which will save approximately 51 gigawatt hours over its 5-year duration. The cost of this program will be 13 cent per kwh saved. This is substantially higher than the current cost of energy which is approximately 6 cent per kwh. The RCS program is not cost-effective for the DWP.

Other programs in the residential area are geared toward apartment buildings which are master-metered, toward large residential electric users, and for those people who request energy audits, the Department will provide Class "A" home energy audits. These programs will cost the Department approximately 1.7 cent per kwh saved, and will save 91 gigawatt hours over the next five years. Additionally, the Department has just begun an extended loan program which will provide financing to residential or apartment owners who will retrofit their buildings with conservation equipment and material.

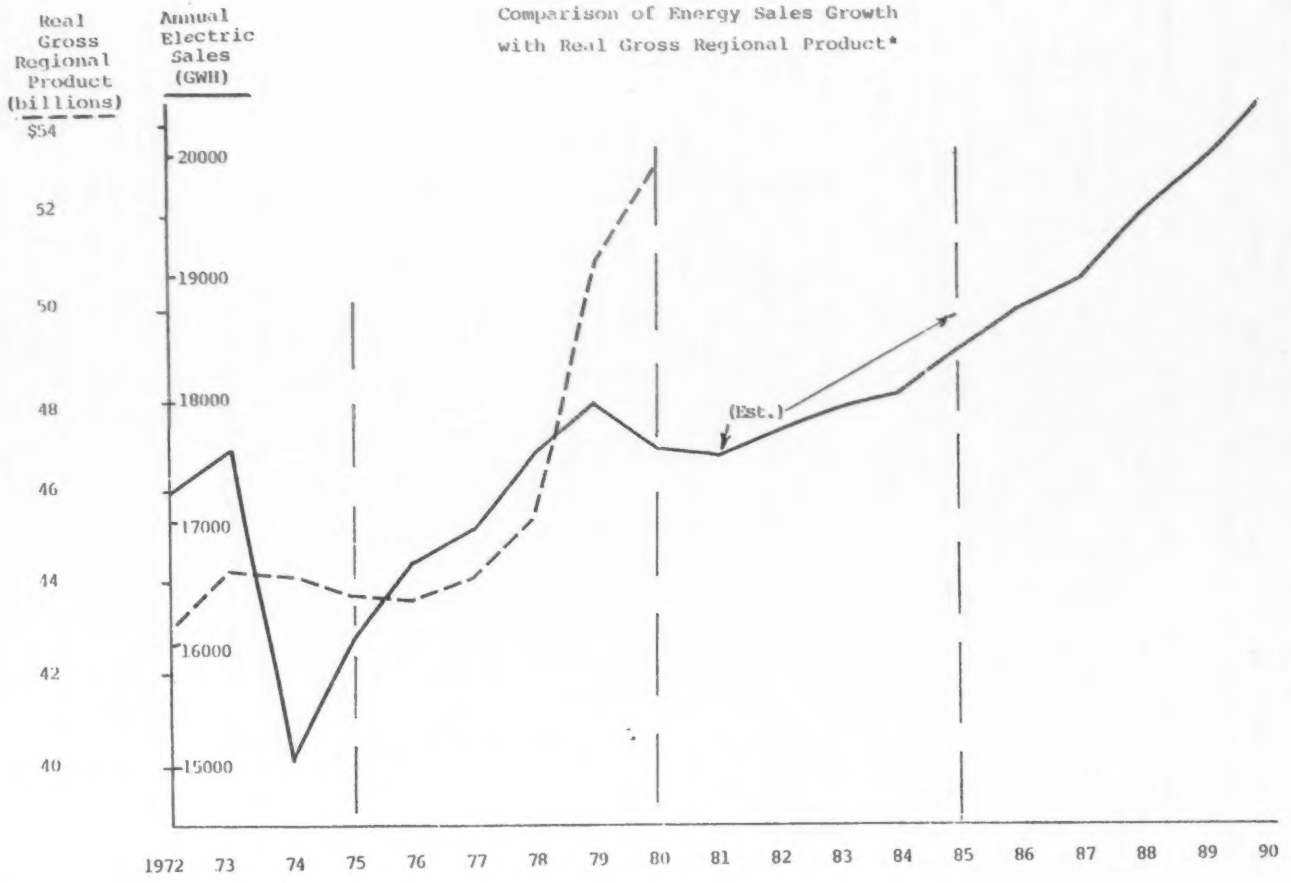
Table 1
Los Angeles Department of Water and Power
Indicators of Local Economic Activity & Energy Sales

Year	Real Gross Regional Product*		Gross Private Investment**		Total Electricity Sales	
	Billions of $s	% chge	Billions of $s	% chge	GWH	% chge
72	43.1		7.0		17212	
73	44.2	-2.6	7.0	0	17550	2
74	44.1	- .2	6.4	-8.6	15034	-14.4
75	43.6	-1.1	4.6	28.1	16009	6.1
76	43.4	- .5	4.5	-2.2	16670	4.
77	44.1	1.6	5.1	13.3	16879	1.3
78	46.0	4.3	5.8	13.7	17515	3.6
79	50.9	10.7	7.6	31.0	17877	2.1
80	53.0	4.1	8.3	9.2	17556	-1.8
81					17526	- .2 (Est.)
82					17750	1.3
83					17855	.6
84					18119	1.5
85					18325	1.2
86					18623	1.6
87					18942	1.7
88					19449	2.7
89					19855	2.1
90					20468	3.0

*This estimate is based on the same types of indicators contained in the Gross State Product.

**Includes New Construction, Durable Goods purchased and Inventory.

Table 2
Los Angeles Department of Water and Power
Comparison of Energy Sales Growth
with Real Gross Regional Product*



*This is an estimate based on the same types of indicators contained in the Gross State Product.

DWP's commercial/industrial energy programs are partially mandated by the state of California. The DWP has developed a program which has been used as a model by the California Energy Commission and which was fully planned and partially implemented prior to the CEC Conservation mandates.

Inasmuch as 70% of the Department's load is in the commercial/industrial sectors, this is an extremely cost-effective program for both the Department and its customers. Over the 5-year projected life of the commercial/industrial program, the Department's customers will save over 1400 gigawatt hours of energy annually at a cost of .3 cent kwh saved. The program is primarily made up of energy audits of commercial and industrial buildings which include cost-effective analysis on conservation practices and equipment retrofit. It also includes seminars for customers with similar businesses in which a conservation consultant will provide 1 or 2 days of instruction to such a group. These programs have been very well received by our customers and have been extremely successful.

The third part of our Conservation Plan is water conservation. Although water conservation may be outside the scope of these hearings, it is considered a separate and important segment of the DWP Conservation Plan, and is often handled in conjunction with energy conservation audits (saving water saves energy). The program components include audits for business and residential customers, the recent dissemination of water conservation kits to 1.2 million residential customers of the City, a leak detection program which covers the Department transmission and distribution main lines, and continued cooperation with other water agencies including the California Department of Water Resources to develop new and innovative water conservation plans.

The fourth segment of the Conservation Plan deals with public awareness. The Department has maintained a relatively low profile in the news media as compared to other California utilities inasmuch as the service area is more confined. The Department's public awareness emphasis has been on direct mail to all-electric residential customers and to commercial/industrial customers with minimum use of the electronic media. This approach has been very successful in creating interest and activity in conservation. Additionally, the Department has used professional trade magazines and other similar types of communication to direct information to a particular segment of our customer base.

A major part of our public awareness program are the programs for education. These programs are aimed at all levels of the schools including primary, secondary, and college, and provide student, teacher, and teacher training materials on energy and water conservation. The Department has licensed an education distribution company to develop "Aunt Energina" which has been very well received by the California schools. This same company had previously developed a "Captain Hydro" water conservation program for primary and secondary schools. The education program also includes the funding of an improvisational theater group called "The Twelfth Night Repertory Company", which creates and produces short plays to be performed in front of junior and senior high student audiences.

This program has been enthusastically received by the school districts and has been recently broadcast on national public television.

Very briefly, these are the highlights of the Department's Conservation Plan. As you can see, there are many diverse parts of the plan which we have developed to specifically serve the various customer sectors in Los Angeles. The Department of Water and Power is somewhat different from other utilities in that 70% of the load serves commercial/industrial customers. It is therefore in the best interest of conservation and DWP's customers, to provide the primary emphasis on that sector.

It is our position that conservation goals should be set very broadly. Each utility should then be responsible for developing the detailed programs which will reach their customers. In this way, the various publics which must be served, can be provided with an appropriate program. By allowing each of the utilities to develop necessary programs which it feels meets its system and customer requirements, each utility is then allowed to adjust to the changing environment and provide the best and most economical service to its customers.

Thank you for the opportunity of providing information and input on this subject. If you have any further questions regarding our programs, you may contact Mr. Jack Klein at (213) 481-5841.

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MARIAN S. FEENEY
Cooperative Extension Specialist
Energy/Resource Development
University of Rhode Island
Kingston, Rhode Island 02881

I am Marian Feeney, Associate Professor, Cooperative Extension-Specialist- Energy/Resource Development, University of Rhode Island. (401-792-2464).

As energy issues and concerns intensify during the 80's a period of energy and political transition both with many unknowns, mixed messages and uncertainty, one philosopher says uncertainty is a time to be creative.

In this written testimony, I will respond to the general questions (p. 7) and some of the Issues for the 81 Section 11 Review (p. 12, 14 and 16). I am also submitting my testimony for the Third National Energy Plan and the Special Edition of the Community and Rural Development Newsletter - 1980 Community Energy for information. (This material was reviewed by EPA but not included in the transcript due to its length).

In addressing the "adequacy of attention to conservation" and the decentralized nature of energy conservation, we must remember that there are many regional differences, many differences withing regions and within areas of states. Thus, conservation policies and program developed on a national level must be flexible for regions, states and communities to meet their specific conservation needs.

The Federal government should give more attention to national and international policies and give strong leadership to initiate state and local cooperative, coordinated and collaborative efforts in energy conservation. Such efforts must foster real interaction and communications to reach common conservation goals among the public and private sectors.

As policies and programs are being developed and as results are monitored and evaluated, more emphasis should be given to the impacts on people, communities, and states, with each dimension being considered - the social, economic, technical, environmental and ethical impacts, NOT just energy impacts.

The priorities and activities selected for energy conservation will depend upon the planning process. Because of conservations decentralizaed nature priorities, activities and programs may continue to be fragmented and uncoordinated. However, as resources (dollars) become limited, both the private and public sectors including government agencies may be more willing to share, cooperate and coordinate for greater efficient use of resources which will make grater impact results. But if the public and private sectors including government agencies and PEOPLE are not included in the planning process, expected results will be difficult to achieve.

The changes in federal programs presents a tremendous opportunity for private firms, state governments, local agencies and non-profits to network on specific conservation issues for efficient delivery of education, information and technical assistance to the residential, small business, industrial, agricultural, government, and transporation sectors. This will eliminate duplication of effort, provide a comprehensive approach to energy conservation issues, and put the talent and abilities already in place to create more effective results. The evaluation questions must be addressed in the program planning development stage, not as an appendix.

From the issue paper, there still appears to be selecting what agency will do what, instead of identifying the priorities, determining the audience needs, identifying informational needs and then strategizing by inventoring existing resources - human and material.

When doing the inventory of resources, roles, responsibilities, mandates, and expertise must be clearly described. Then a creative framework for a comprehensive program to meet the priorities can be developed. This framework must include planning, implementation, delivery, monitoring, data collection and reporting results.

Joint cooperative efforts must also be rewarded. One issue which seems to come to the forefront in numerous public meetings is who has the information, how to access the information and evaluate the information, and we have the information but not the delivery system.

Such efforts demand strong leadership, a focus on priorities and goals, and clearly defined roles and responsibilities of each participating agency, government, and private representative with continuing communication and cooperative efforts supported so each sees how pieces fit together and what the whole can produce. Each must feel a commitment to their responsibility.

By combining the public and private sectors into a comprehensive approach to energy conservation-existing workers, educators and the private sector, more thought might be given to organizing cooperatives to provide low cost service to low income, elderly and handicapped or struggling businesses. Or an energy management service corp might be organized to provide energy conservation services. Agencies and educational institutions could provide management, operation and service delivery seminars and support to both cooperatives and corps.

I feel the opportunities are there but can we put aside those barriers or what we think are barriers to work on a creative framework to meet the energy conservation needs of PEOPLE and communities which will have an impact on the state, region and the nation.

Thank you for the opportunity to share my thoughts and recommendations again this year. I will be willing to assist in implementing energy conservation and management actions through cooperative efforts.

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KELLY FINN
Kansas City Citizen/Labor Energy Coalition
Box 5952
Kansas City, Missouri 64111

The Department of Energy under Secretary of Energy James Edwards is narrowing energy options of the American people. Conservation and Solar programs are being systematically dismantled, despite the fact that a Fall 1980 Gallup poll found that solar was the most popular energy option for Americans.

Further, the proposed elimination of 1) the Solar Energy and Energy Conservation Bank, 2) Energy Extension Service, 3) Residential Conservation Service, 4) State Energy Conservation Projects, 5) Home Weatherization Programs along with elimination of CETA programs that provide much of the labor needed for these projects, cutbacks in aid to assist in payment of skyrocketing home energy bills, combined with the deregulation of oil, gasolined and natural gas prices ad up to what many see as a vicious attack on low and moderate income people. Low income people spend 35 to 50 percent of their income on energy expenses. Yet, home heating costs could be reduced as much as 40% through proven, cost effective home weatherization techniques. The Reagan policies mean that a growing number of Americans will not be able to choose from expanding array of solar and energy efficiency options, but because of outrageous fuel prices and lack of weatherization assistance they will be limited to a choice of fuel bills or food.

It is suggested that private firms assume new responsibilities, but most solar/conservation firms are small with almost no money for publicity, education, consumer information or free services.

If our energy problem is considered a national security risk, we should want to solve this national problem as soon as possible. The speed at which we can solve this national problem depends largely on Federal assistance, both to lower energy use in the houses of low income people and in assisting, through educational efforts, the market penetration of solar/conservation products and services.

It is also suggested that state and local governments assume new responsibilities. However, severe limits are placed on taxing powers of state and local government. Often these tax restrictions have been promoted by local Reagan supporters, even though such policies would make it impossible to carry out the Reagan plan for more local control. State and local governments are facing tight and even dwindling budgets. Higher fuel costs, resulting from deregulation, in the 39 energy importing states means millions more dollars pumped out of these states economy, further weakening their ability to respond to the new challenges dropped by the Federal government. Yet, the federal government after breaking promises to millions of Americans, is promising now that state and local governments will somehow be willing and able to follow through on Federal commitments.

Our private non-profit organization has been increasing its skills and moving more in the direction of providing energy services (energy audits, conservation installations, solar collectors) for low and moderate income people. Much of the financing for this work has come from federal sources, and with the Reagan cutbacks many of these services will have to be abandoned. The need is still there for low income energy programs, and it is growing. KC C/LEC plans to make a continuing effort to insure that he needs of our low and moderate income constituents are met.

In evaluating effects of Federal energy policy changes aggregate totals of units of coal, electricity, natural gas, etc. are meaningless in terms of citizen impact. Aggregate totals such as these tell nothing about the amount of energy wasted or the impact on various income levels. The more accurate way to gauge the effects of Federal policy changes would be to compare the before and after percentages of family income applied to energy costs. Thus success would be a lowering of the percentage, which would leave more family purchasing power for food, clothing, housing and recreational expenses. The lowered percentage could be achieved by either more efficient use of energy or lower or stablized energy prices. The administration's energy policies, at this time of this writing, encourage neither of these roads to success.

The administration energy policies offered by Secretary Edwards offers no hope, no sustainability and no vision of an energy future in which most American would like to participate.

MARGARET P. GARLAND
Director
State of Vermont
State Energy Office
Montpelier, Vermont 05602

The major assumption of the current federal energy policy is that the market place will solve all problems related to energy both for this country and the international community as well. This assumption is predicated on a completely free and unfettered market place where demand and supply are in harmony. It is doubtful that such market conditions can be obtained for any major fuel source; it is certainly not true for the petroleum market where prices are set by a cartel headed by several OPEC nations. A lack of recognition of this fault and withdrawal of governmental involvement in energy planning will have adverse impacts on the development of new technologies, our economy, the environment and, last but certainly not least, the users of the several energy forms at all levels.

The government has a definite role, in our judgment, in dealing with the imperfections in the energy marketing and distribution systems and assuring that an equitable distribution of available resources takes place especially during periods of shortages. If the federal government does not act in this fashion on a continuing basis, there is a real possibility for economic disaster for some areas of the country. New England is particularly vulnerable to supply disruptions given its unique and continuing dependence on foreign oil. A dependence that seems likely to continue in the short term and longer.

Given the decision to continue to promote petroleum, natural gas and nuclear as opposed to the development of new technologies, New England's dependence on oil, and thus Vermont's, is going to be tied more closely than ever to dependence on foreign oil, at least for the foreseeable future. This recognizes the time needed to bring new domestic sources on line even if they are found. A better policy would be one that promotes both the search for more petroleum and natural gas and the search for new technologies backed up with a strong program of conservation.

In Vermont, a strong move to conserve present energy sources has taken place since Arab oil embargo of 1973-1974. This has been particularly true in the use of petroleum products. In addition, there has been a strong trend to convert residences and businesses to the use of wood and solar in the provision of heat and hot water. Some industrial firms provide their heat, domestic hot water and process heat and hot water from these renewable sources. One of the state's largest banks, the Merchants, is building all of its new branches with solar heating. The Gilman Paper Company of Gilman, Vermont is currently heating exclusively with wood and intends shortly to generate its own electricity from a boiler fired with wood chips.

Much of the technology used by Vermont's residential and commercial users was developed under public programs. Such programs, which we feel are proper areas for governmental actions, will be lost under the proposed plan. Such a loss will severely set back the gains made in these areas, further promoting our dependence on expensive and uncertain supplies of foreign oil.

It is clear that, even with some reduction in the world price of crude oil, our balance of trade deficit will continue at a high level due to our importaion of large amounts of petroleum. The security of this oil supply is constantly in question; as this is written, events are occurring in the Middle East that could escalate into another conflict affecting the delivery of oil to the United States.

Any National Energy Plan should recognize the need to minimize our dependence on the international oil cartel and the possibility of supply restrictions which even the Strategic Petroleum Reserve may not be able to deal with. In any event, less dependence of foreign oil should improve our balance of trade. The development of new technologies would further reduce our need for foreign oil and make the United States preeminent in the development of such technologies.

The policies proposed in NEP III do not sufficiently deal with the contribution which conservation has made and can continue to make in the energy needs of the country. Not only does conservation reduce the need for expensive foreign energy sources, but it continues to provide employment for the unemployed, the development of new industries and the expansion of old ones, and increases the amount of capital available for investment now and in the future.

Conservation has allowed users in all of our economic sectors to deal effectively with the ever escalating costs of all types of energy. But, even with the effort made in Vermont and throughout the country, our residential conservation efforts and programs for industrial and commercial efficient energy usage lag far behind many other industrialized countries in the free world. A National Energy Policy must continue to recognize the positive effects of conservation in dealing with our energy problems.

A substantial government-supported program of energy conservation and efficient energy usage coupled with an aggressive program to develop further conventional energy sources makes more sense and has more positive economic aspects for the future than a program promoting only the latter.

A program to promote conservation should include a strong public information segment which deals with the conservation and more efficient use of present or conventional energy sources and the commercialization of efficient alternative technologies and energy sources. Such a program should support state initiatives in the areas of conservation and substitution of renewable resources for non-renewable ones.

In the latter area, Vermont has used its federal funding in the past to develop the following:

1. The Home Energy Audit Team which provides on-site Class A audits and information on efficient energy usage to Vermont householders. (Some 7000 households have received such audits at $72 per audit. A very low cost in relation to the savings achieved by those audited).

2. The Vermont Industrial Energy Conservation Advisory Program - Under this program, energy experts frrm private sector companies and from State Agencies combined to give advice on energy efficient management to over 150 small Vermont companies which otherwise would not have had the resources or time to develop their own program. Each company surveyed will save approximately 20% on their heating and 10% on their electrical usage.

3. Vermont's Vanpool Program is rated as the best rural Vanpool Program in the United States. It has been instrumental in increasing the number of vanpools in Vermont from 23, three years ago, to 109 as of this writing. Ridesharing, including both van and carpools, has had a marked impact in Vermont where public transportation is virtually non-existent in most areas, and people must drive to gainful employment and to get the necessities of life.

Such programs will be severely impacted by a national policy that reduces direct federal support of energy conservation efforts as well as eliminating support of state efforts to promote a conservation ethic for energy usage. Public information at all levels is extremely valuable in the furtherance of any conservation program.

The public's hunger for information of both data-related and educational types is reflected in the number of requests the federal government and the states receive through the mail, at public meetings or through energy information lines such as that maintained by the Vermont State Energy Office. Education at all levels is needed if energy consumers are to make wise decisions in choosing the proper available energy options.

A federal-state partnership is crucial in the area of conservation and in other areas where states have developed state-specific programs to deal with such things as converting utilities and industrial firms to the use of wood or coal, energy efficient management for farms, the use of passive solar in residential, farm and commercial building designs, among others.

"Formulation of energy policy must be sensitive to the needs of the poor . . . . . holding energy prices down for rich and poor alike is an ineffective way to help the poor." That's true, but no effective counter proposal is discussed. An intensive program of weatherization for the low-income and elderly, would produce immediate results by reducing the percent of fuel wasted in dwellings and would more cost effective than a subsidy of the energy producers through fuel aid programs. Such an approach will be more productive in reducing the appalling waste of energy in much of the housing used by low-income families.

Some members of the State Energy Office technical staff have commented that the amount of carbon dioxide placed into the atmosphere by the direct combustion of biomass does not result in a net increase in carbon dioxide. Biomass, through its normal decaying process, releases carbon dioxide and water. Combustion of it will not and greater quantities of gas to the atmosphere. Further, it seems fairly short-sighted to make the statement that environmental impacts from carbon dioxide are unlikely in this century, when this century has only twenty years to run. This seems to be glossing over a potential problem without any attempt to address the net impact of emphasizing technology which may contribute to a future problem.

CONCLUSION

Many of the energy problems of the United States, so forcefully brought to light by the 1973-74 energy embargo, are still with us. We are even more dependent on foreign energy sources than we were then as the possibility of a severe petroleum supply disruption, the SPR to the contrary, is still a very real possibility with the attendent devastating economic, political and social impacts on the United States and the world.

It is our contention, if the foregoing is accepted as a given, that the federal government can't step back a completely hands off/free market appoach. In our judgment, the federal government has an obligation to provide leadership to the nation in achieving economic progress by achieving energy efficiency using affordable and reliable fuels. This leadership would involve promotion of increased domestic energy production, the furtherance of new energy technologies and a strong conservation program promoting both the efficient use of present energy sources and the substitution of renewable for non-renewable energy resources.

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J. JOSEPH GARRAHY
Governor
State of Rhode Island
Executive Chamber
Providence, Rhode Island 02903

The State of Rhode Island welcomes the opportunity to express its views regarding the new directions of the Federal Energy Policy and its impact on our State and local governments.

We in Rhode Island are about 80 percent dependent on foreign oil for our energy needs. A disruption in oil supply from abroad may occur at any time and the ever increasing price of energy is exacerbating the unhealthy state of our economy. Rhode Island has no significant indigenous energy resources to turn to and it is clear that any new energy tehnologies will not be developed in the 1980's. Rhode Island has strongly supported the administration's efforts to expedite offshore oil and gas development, but this too will take 7-8 years before any discovery can reach the production stage. As a result, Rhode Island has concluded that the cleanest, least expensive, and least vulnerable energy option today is to use less by being more efficient. Our efforts in the conservation of energy speak for themselves and largely through Federal Funds we have created an awareness that has reduced our oil consumption nearly 20 percent over the past few years.

The Administration's dramatic shift away from any meaningful role for the Federal government in energy conservation is a giant step backwards for both Rhode Island and the Nation. It is my firm belief that the current Federal administration has gravely underestimated the value of energy efficiency. Energy Conservation can be of major economic, military, environmental, and social value to the United States. Numerous studies have shown that increased energy efficiency will provide more energy at a lower cost and sooner than any other option over the next twenty years. Therefore, Government has an essential role in achieving the nation's energy conservation potential and cannot let the market place assume full responsibility for what is a key factor in our economic well-being and our national security.

It is with the above concerns in mind that the enclosure addresses those issues posed by EPA for their review of Federal energy conservation.

With warm regards.

J. Joseph Garrahy
Governor

WRITTEN TESTIMONY, STATE OF RHODE ISLAND

Many studies and numerous articles have been written regarding the substantial barriers which exist to implementing price - responsive energy conservation. The Journal of the Federation of American Scientists in its April 1981 issue examined the proposed budget cuts in energy conservation in detail and concluded they "lack economic and security rationale". There are three points that should be emphasized regarding the theory that market prices will achieve the energy conservation objectives that are vital to Rhode Island's economy. They are as follows:

(1) Rhode Island businesses, schools, state and local governments and homeowners simply cannot afford the cost of conservation measures. Our businesses are already struggling to remain competitive because of rising energy costs combined with their older and less efficient plants and buildings. Sufficient capital is not available in most small businesses, local governments and moderate income families to analyze their energy problems and finance conservation measures at current interest rates. The consumer cannot respond to rising costs and must choose between bankruptcy, food, clothing, or heat. Federal loans at lower than market interest rates, grants, or tax credits are necessary to enable consumers to convert high energy costs into conservation actions. Failure to meet this need will result in more unemployment, increased need for fuel assistance and federal funds for consumption vice conservation.

(2) Private businesses, local governments and the average homeowner require impartial and accurate information regarding conservation and assistance to financing energy conservation and making the correct response to higher energy prices. Such information has been an important contribution of the Rhode Island Governor's Energy Office and is essential in a period of rapid price change and new technology. Training and education programs sponsored by the energy office will also be curtailed resulting in a less "energy skilled" public and work force. Furthermore, institutional, legal and economic barriers which slow progress will become greater roadblocks to conservation action because their removal by governmental action will no longer be feasible.

(3) Rhode Island has many old multi-family dwellings which are rented to the poor and elderly. The owners of these buildings have no incentives to save energy and merely pass the rising energy costs to building tenants. As long as the availability of rental space is limited, tenants are forced to pay the increased costs. This is another example where institutional or market place barriers prevent higher prices from working. This is an area where mandatory efficiency standards or conservation measures should be instituted.

Responses to the general questions posed by EPA are as follows:

(1) How are private firms, state governments, and local agencies preparing to assume their new responsibilities?

Rhode Island's energy office is totally Federally funded except for the required administrative matching grant for Title III. If Congress does not modify the Administration's proposal for energy conservation, funding by state appropriations will be required to continue all energy programs except Title III. Present austere State and local budgets will be hard pressed to come up with substitute funding. At best Rhode Island would be forced to reduce its energy programming and staff by 50 percent. The extent that private, state, or local agencies will assume new responsibilities cannot be determined and new initiatives cannot be planned until actual funding decisions are completed.

(2) Which activities will get priority from public and private organizations and what will be the consequences if some activities are discontinued?

Long term goals will have to be sacrificed for short-term needs. Programs which respond to the more immediate needs are those which are most likely to receive priority. In Rhode Island these programs are low income heating energy assistance and low income weatherization. These programs respond to the need to help people survive the impending heating season. The low income heating energy assistance program pays heating bills but does little to save energy. Programs aimed at businesses, the average citizen, public buildings, and improving the conservation and renewable resource industry will be secondary even though the energy consumed in the low income sector is miniscule in comparison. Expected cuts in the energy conservation program would eliminated on-going information programs in Rhode Island that have greatly benefited the public in providing impartial and accurate information about energy efficiency in equipment, buildings and motor vehicles.

(3) Have any new initiatives, opportunities, or efficiencies energy conservation programs?

Current programs are already operating under severe funding constraints and have been designed to take advantage of any initiatives, opportunities or efficiencies available. For instance, the programs have never provided direct assistance to local levels of government, under the schools and hospitals retrofit program (Title III, NECPA). States receive more applications than there are funds available. Building code enforcement programs are severely lacking in manpower and sufficient funding is available to provide energy conservation services to only 10 percent of the state's businesses.

Rhode Island has initiated a Community Energy Task Force to better analyze the energy requirements at the local communities and more effectively respond to their problems. This program will likely be terminated unless costs are assumed by the communities.

(4) How can the federal government assist in this period of transition?

If the Reagan administration program recommendations for energy conservation materialize then the transition in Rhode Island will be a rapid phase out of all conservation programs except Title III. The Federal role during this period must be to provide the states with block grants which allow greater flexibility in dealing with their priority programs and adapting to local conditions and needs.

The most prudent way that a transition could be effected would be to allow a phased reduction of federal assistance with an increasing local match requirement. This will permit states that choose to rely solely on the "market price" theory of conservation to phase out programs while those that do not adhere to this theory could seek state resources to meet their priority energy conservation needs. S1166, sponsored by Senator Weicker and Hatfield encompassed this approach and is supported by the State of Rhode Island.

(5) How should the federal governmnt evaluate and monitor the effects of its new energy policies and program changes?

Evaluations should be carefully structured to include an analysis of regional impacts, the performance of the conservation/solar industry, and the effects of the market price theory on barriers to conservation such as rentals and lack of capital. Complaints to consumer agencies of government, the progress of small business, governments and non-profit organizations, rental costs, sales of energy materials and prices, energy conservation loan volume, and consumer attitudes and reactions are important and should be monitored. In addition, a continuing analysis of alternate fuel consumption and prices will help determine program success. Technical assistance and more emphasis on information-sharing would be helpful. Studies ought to be initiated to monitor and evaluate the impact of the current Federal energy policy to determine if the results warrant a continuation of the market-price principle.

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MICHAEL GERMAN
Policy Evaluation & Analysis Group
American Gas Association
1515 Wilson Blvd.
Arlington, Virginia 22209

The American Gas Association (A.G.A.) welcomes this opportunity to provide its comments on the Environmental Protection Agency (EPA) Notice of Public Hearings on the Federal Energy Conservation Program. 46 Fed. Reg. 29752 (June 3, 1981). A.G.A. is a national trade association comprised of nearly 300 natual gas transmission and distribution companies which provide natural gas to approximately 160 million consumers in all 50 states. These A.G.A. member companies account for nearly 85% of the nation's annual gas utility sales.

EPA's 1981 Section 11 review program is focusing upon the changing federal energy conservation policy which is now tending to favor a decentralized thrust for energy conservation. EPA's focus is apparently based upon the assumption that the federal government will withdraw from its active pursuit of comprehensive energy programs such as the Residential Conservation Service (RCS) Program 1/ at the Department of Energy. While it is apparent that the present Administration plans a more limited role for the federal government in energy conservation matters -- as has been exhibited by the Administration's budget proposals for FY 1981 and FY 1982 -- A.G.A. is not convinced that the result of such budgetary changes will be of great consequence for our member companies. Our belief is based upon the fact that, regardless of whether monies are removed from the FY 1981 and FY 1982 budgets for such programs as the RCS Program, the statutory obligations for governments and covered utilities will remain. 2/

1/ 10 C.F.R. Part 456

2/ Furthermore, substantial civil penalties for noncompliance will remain as substantial impediments to the development of locally-tailored conservation programs. See: Section 219(d) of the National Energy Conservation Policy Act (NECPA, 92 Stat. 3206; 42 U.S.C. Section 8201).

Since the passage of NECPA in 1978, most utility conservation efforts reflect the stringent requirements of the RCS Program to some extent. In order to get an idea, then, as to what role utilities will play assuming federal mandatory programs are abolished, we believe that EPA should focus its attention on what was being done prior to the enactment of NECPA. In the gas industry, an A.G.A. survey in August, 1978, canvassed 213 gas distribution member companies. 168 of these companies responded to the survey. Of the 168 respondents, 87 (52%) already provided home energy audits, with 74 (44%) providing audits at no cost and 7 (4%) providing them at some cost. Attic insulation was marketed by 47 (28%) of the respondents, and 26 (15%) of the respondents sold wall insulation. Nine (5%) of the respondents marketed storm doors and windows. Nearly all of these programs were initiated without any direct federal, state or local mandate.

Some specific actions taken by our member companies include a gas utility in the Chicago-Detroit area, which marketed ceiling insulation and offered a variety of financing options for its customers. By March, 1979, the company estimated that approximately 140,000 homes had been insulated. Another gas utility in the Northwest also was operating an ambitious energy conservation program at the time NECPA was enacted. In addition to offering financing arrangements for its customers, they offered ceiling insulation, side-wall insulation, night set-back thermostats, storm windows, furnace ignition devices (eliminating pilot lights) and new furnace and water heaters which met self-imposed stringent energy conservation standards. One of our west coast combination companies, at the time NECPA was enacted, had a program aimed at encouraging consumers to add insulation to their buildings by offering zero interest loans for the purchase of insulation. In the commercial sector, another gas utility on the west coast had a conservation program which offered consulting advice on energy conservation measures and practices to owners of commercial buildings.

If the mandatory aspects of the RCS program are eliminated, EPA can expect to see various states electing to retain the existing RCS Program in some form. Furthermore, it is likely that many states will elect to develop conservation programs more closely suited to the unique climatic and economic situations in their states. This conclusion is borne out by the fact that prior to the enactment of NECPA, gas utilities in two states, Wisconsin and Oregon, were implementing state-mandated conservation programs. These mandatory programs existed at the same time as those voluntary utility efforts described above. In Wisconsin, the state public utility commission mandated a program which was similar to the RCS Program in that utilities were required to contact and offer energy audits to their customers. To date, experience in Wisconsin has been that, while initial reaction to the program was satisfactory, there has been no significant participation in the program in the last two years. The lack of interest on the part of Wisconsin consumers at this time is particularly surprising considering the fact that most utilities in that state have been aggressively marketing the state program. The Oregon program, adopted in 1977 by the state legislature, is also similar to the RCS Program in its provisions for home energy audits and utility arranging services for installation and financing of conservation measures.

In terms of the energy savings which can be expected as a result of shifting the conservation initiative from the federal level to the state and local level, EPA should again consider the type of energy conservation savings which occurred prior to the enactment of NECPA. A.G.A. has conducted a recent survey of the natural gas utility industry aimed at discerning changes in energy consumption during the period from 1973 to 1979. During this period, the RCS Program was not in effect and therefore had not yet had any impact on energy conservation. The A.G.A. member company survey strongly indicates that substantial conservation has already taken place in the residential and commercial sectors -- without mandatory federal programs. For example, in the residential sector, gas use declined at a rate of 2.7% per year, resulting in a 15% decline in per user gas consumption during the survey period. Furthermore, commercial sector energy consumption declined at an annual rate of 2.2% per year, resulting in 12.4% less gas consumption per user during the 1973-1979 survey period. Obviously, A.G.A. has filed extensive comment with DOE stating that there is no necessity for a federally mandated conservation program such as the RCS Program. Given the substantial amount of price-induced conservation which already has taken place, such a program will add an unnecessary burden to utility.

It is our understanding that DOE is in the process of revising its RCS rule, with the goal of making the rule reflect more strictly the requirements of NECPA, thereby eliminating many of the questionable interpretive aspects of the RCS Program added to the existing rule by DOE. Since this proposed revised RCS Program rule would give EPA and the natural gas industry a better idea as to what the federal role will be in residential energy conservation, A.G.A. hereby reserves the right to supplement its comments to EPA at such time as the proposed revised RCS rule has been issued. We believe that this rule will be relevant to the focus of EPA's Section 11 inquiry.

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SARA HAMRIC
Associate Director, Energy
American Paper Institute, Inc.
260 Madison Avenue
New York, New York 10016

The American Paper Institute is pleased to submit comments to the Environmental Protection Agency on the future of various federal energy conservation programs discussed in EPA's Issue Paper, "A Review of Federal Energy Conservation Programs."

The American Paper Institute (API) is the national trade association of the pulp, paper and paperboard manufacturers in the United States. API consists of approximately 175 manufacturers which produce about 90% of the nation's pulp, paper and paperboard output. In 1980, the entire paper and allied products industry output was valued at approximately $59 billion. This industry, which operates in all states of the union, employs more than 700,000 people.

As an energy-intensive industry, substantial efforts have been made to voluntarily increase our energy efficiency, and reduce our use of fossil fuel and purchased energy. The paper industry has improved its energy efficiency since 1972 by reducing its 1980 fossil fuel and purchased energy use per ton by 26.3%. During this time, the paper industy reduced its total use of fuel oil in barrels by 27.5%. The industry's fuel and energy consumption in 1980 consisted of 48.1% self-generated hydroelectric power. By burning its non-fossil and renewable residues (spent pulping liquors, bark and hogged wood), the industry increased its energy self-sufficiency from 40.5% in 1972 to 48.1% in 1980.

The paper industry has consistently supported the use of free market forces to encourage energy conservation. The industry applauds the efforts of this Administration to move the country away from government directed conservation efforts. The Department of Energy's initiatives to reduce the FY 1982 budget funds for federal conservation programs, referred to in the EPA Issue Paper, is one of these efforts which the paper industry supports.

The wastepaper recycling segment of the paper industry would like to take this opportunity to comment on federal, state and local conservation activities in relation to the construction and operation of waste energy facilities.

To the extent that governments develop programs for the burning of urban waste to recover its energy value, the paper industry believes that the free market should be allowed to determine the destination of recyclable waste paper. Federal, state and local governments should not enact legislation that precludes or interferes with the collection of wastepaper for recycling. There are current laws and programs which do so. Allowing the market to determine the most economical use of recyclable wastepaper is consistent with the Reagan Administration's philosophy of not interfering with free market choices.

The American Paper Institute appreciates this opportunity to express its views to the Environmental Protection Agency on this matter.

RALPH B. HIRSCH
National Legislative Director
League of American Wheelmen
112 South 16th Street
Philadelphia, Pennsylvania

At least in the short run, energy conservation in several sectors is likely to be a highly economical form of energy production. Although, as the just-released National Energy Policy Plan (July 1981) observes, some conservation measures require considerable investment for long-term savings, some require little investment. The enhancement of bicycle transportation is one of these low-cost measures. Already a significant and growing part of the transportation sector in the United States, the bicycle has the added advantage of being an instantly recognizable symbol of energy conservation.

The energy conservation activities of the Department of Energy as they bear on bicycle transportation are discussed below under four headings. A brief review of current status under each heading is followed by recommendations for future action.

(1) Leadership and coordination of federal agencies' efforts

In July 1980, DOE was assigned the role of developing guidelines for energy management in the federal government and evaluating the compliance by agencies with those guidelines (see appendix 1). So-called "two-wheeled vehicle programs", to include the encouragement of bicycle use for commuting and operational purposes, are among the measures that must be considered in each agency's energy plan.

We urge specific attention by DOE to these two-wheeled vehicle programs in the evaluation of the first year's reports from the federal agencies, for purposes both of creating a baseline for gauging progress in future years and of identifying measures that may be readily transferable to other agencies.

DOE should also take a strong position at its own facilities, such as Fermilab and Hanford, to foster bicycle use among employees. Care should be taken to avoid policies that tend to discourage or interfere with bicycle use, such as a ban on bicycle use (proposed in spring 1981 but now apparently averted) on some roads at Hanford, and incidents last year in which enforcement personnel at Fermilab reportedly tried to discourage bicycle commuting by staff members.

(2) State and local conservation activities

State energy conservation programs in several states include a bicycle transportation component. However, many state highway agencies still are inclined to give bicycle transportation measures a low priority. An expanded concern by state energy offices for inclusion of such measures may serve to raise these projects to a priority level where they could successfully compete for funding by state or local governments.

The April 1980 Department of Transportation report "Bicycle transportation for energy conservation" (required by Section 682 of the National Energy Conservation Policy Act of 1978, Public Law 95-619) recommended that bicycle transportation be integrated in "appropriate federally required state and local planning activities" by DOE and several other agencies. (See appendix 2). As information is lacking to gauge how well this has been done so far, DOE should evaluate state and local planning done under its requirements to obtain that information.

Energy contingency planning at the state and regional level should include the contribution that bicycle use could make in various energy emergencies. Although this is being done in a few metropolitan regional planning agencies (e.g. Delaware Valley) it needs to be considered in all of them.

(3) Grants programs

We are aware of only a few bicycle-related grants made by DOE. So far as we know, they have been relatively small in size and high in the quality of the projects. These include the significant and valuable support by DOE to the first national conference for bicycle professionals (Pro-Bike 80) in Asheville, North Carolina in November 1980, and the recent award of an Appropriate Technology small grant to a bicycle group in Atlanta, Georgia, for a project to foster bicycle commuting. It would be helpful if DOE were to prepare and collate information to publicize all these projects, and to encourage agency officials to consider favorably any future applications for similar projects of high quality.

(4) Public information activities

Scattered efforts of uneven quality have been undertaken by DOE in promoting bicycling as an energy conservation measure. On the positive side, a listing last year in the Energy Consumer of state bicycle coordinators and other contact persons was helpful, and should be repeated in an updated version.

On the other hand, some efforts are of dubious benefit. Newsweek (6 April 1981) showed, under the slogan "Keep it up, America. Leave the car at home once in a while" a man and a woman riding double on a single bicycle and violating many safety rules. An important message was undercut by being inappropriately conveyed. The opportunity that the bicycle can provide as a potent and instantly recognizable symbol of conservation should be capitalized upon by DOE. Advance consultation with the organized bicycling community will enable DOE to take full advantage of this potential.

A particularly promising opportunity will be offered by the DOE's participation in the 1982 World's Fair in Knoxville, Tennessee. The role of energy conservation generally, and of bicycle transportation's contribution specifically, should be presented to the anticipated millions of fairgoers.

Summary

Large cuts in funding for conservation-related activities in the DOE's 1982 budget suggest a general retreat from conservation as an important component of departmental policy. We think that conservation ought to have more emphasis among DOE's objectives. However, even under a regimen of reduced funding the bicycle offers an outstandingly efficient vehicle for promoting energy conservation. As the national organization of bicyclists we are prepared to work with the department to get the maximum of mileage from that vehicle.

Appendix 1

10 CFR Part 436, Federal Energy Management and Planning Programs; Guidelines for Energy Mangement in General Operations of the Federal Government

Final rule. (45 Federal Register 44558, 1 July 1980)

436.104 Energy conservation measures and standards.

(a) Each agency shall consider for inclusion in its plan the measures identified in appendix C of this subpart.

Appendix C - General Operations Energy Conservation Measures

(a) The following individual measures or set of measures must be considered for inclusion in each agency's 10-year energy management plan:

* * *

(10) Two-Wheeled Vehicle Programs -- Includes activities to encourage the substitution of bicycles, mopeds, etc. for automobiles for commuting and operational purposes. These may include the establishment of weather-protected secure storage facilities, shower and locker facilities, and restricted routes for these vehicles on Federal property. Cooperative programs with local civil authorities may also be included.

APPENDIX 2

Office of the Secretary, Department of Transportation, Bicycle transportation for energy conservation, April 1980 (Report of the Secretary of Transportation to the President and the Congress, pursuant to Section 682 of the National Energy Conservation Policy Act of 1978, Public Law 95-619).

DOT bicycle program activities (page 38):

2. Implementing public information/awareness programs.
   The Department will work with the Department of Energy to insure that federally sponsored energy conservation media cmapaigns call attention to the benefits of cycling.
   DOT will request that all appropriate Federal agencies (DOI, DOE, HUD, EPA) require full consideration of bicyclist's needs in appropriate federally required state and local planning activities.

MARI L. HOFFMAN
313 1/2 S. 9th Avenue
Yakima, Washington 98902

I would like to join the public hearing on federal energy program changes, but D.C. is too far from Washington (state) for me to attend. Still I would like to add my comments to those you will receive.

I feel that this administration has really missed the boat on energy. By putting all our eggs into the oil companies baskets, we're bound to end up facing the last drop of oil or the last chunk of coal with few alternatives and at the cost of ruining our environment. Fission nuclear expansion will find us surrounded by an ever growing pile of plutonium. Both of these should take a back seat as far as our future goals are concerned, I feel.

I was disappointed to hear Pres. Reagan cut back most of the solar, geothermal, tidal, wind, etc. research budgets. This is indeed a step backwards. These "unconventional" energy forms are our only long term hopes, except for fusion nuclear and hydro power. Fusion seems to be safer and should be researched further.

Hydro is a whole separate can of worms. I agree that dams are necessary in some areas for irrigation, city water supplies and flood control and where a dam exists I feel a generator should too, BUT I also like wild, free rivers for my own selfish recreational desires, for beauty, and for wildlife. We need healthy rivers for healthy ecosystems to continue. So hydro power should only be part of the answer, unlike what the Army Corps of Engineers seems to think.

Conservation and simpler life-styles could also be encouraged by the federal government. This doesn't seem to be the case with our present administration, unfortunately.

I know the problems are very complex, but the direction in which we seem to be heading has me very worried. The year 2000 is very close. We have little time to correct our ways and no time for mistakes. PLEASE HELP!!

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AVIS E. HOLMES, President
Detroit Energy Corporation Consortium
State of Michigan Plaza
1200 Sixth Street
Suite 404
Detroit, Michigan 48226

RESPONSE TO ISSUES AND DISCUSSION TOPICS RAISED ON PAGES 4 & 5

Analysis of the rationale, asumptions, state and local programs budget information, etc., clearly indicates substantial conflict between the stated national goals on "energy conservation" and the means by which to achieve the goals, namely funding.

- * Quote, "The Nation's energy problems will be solved primarily by the American people themselves -- by consumers, workers, managers, inventors and investors in the private sector -- not by the government."

  Response: Prior to sweeping wholesale changes, previously established and planned programs should be evaluated and closely monitored over a three (3) to five (5) year period. Over the past four (4) years appreciable money as invested in these programs. To eliminate these programs without properly determining their effect is extremely wasteful.

- * Quote, "The Government's role is to establish sound public policies, based on economic principles, national security concerns, and a due regard for environmental values, so that individuals and firms in the private sector have the incentives to produce and conserve energy efficiently, consistent with the national interest."

  Response: The Government's role is to guide and promote "Alternative energy sources" in order to efficiently utilize the nation's available resources.

- * Quote, "The Government's role is not to select and promote favored sources of energy. Doing so risks wasting the Nation's resources.

  Response: The Government's role is to guide and promote "Alternative energy sources" in order to efficiently utilize the Nation's available resources.

- * Quote, "Formulation of energy policy must be sensitive to the needs of the poor. But, energy policy should not be used as an income transfer program. For example, holding energy prices down for rich and poor alike is an ineffective way to help the poor."

  Response: If energy prices/costs are targeted to the pocketbooks of the rich some subsidy must be available to the poor. The federal government must spend for energy purposes because an adequate supply of energy is our first line of defense and is essential to the national interest and security.

- Quote, "Federal public spending for energy purposes should be limited to those areas in which the private sector is unlikely to invest sufficiently, such as in high cost, long lead time technologies with substantial prospects of high pay-off. Public spending should not be used to subsidize domestic energy production and conservation since this buys us little additional security and diverts capital, workers and initiative from more productive uses elsewhere in the economy."

  Response: Public (federal) spending, to subsidize domestic energy production and conservation is an "appropriate" and "necessary" federal government expenditure, because the United States is not energy self-sufficient. Concurrently, this nation is an excessive consumer of non-renewable energy. Residential usage comprises thirty three percent (33%) of energy consumption and therefore the public must spend to reduce this high percentage. Moreover, energy production and conservation are integral components linked to all sectors of the economy. Since most essential industries have been highly developed, the track to innovation and continued progress lies in our capability to improve through energy conservation and energy production.

  Government spending is a "long term investment" with an "immediate result" of employment and education. Employment opportunities will in turn stimulate the economy. It is essential that government spends its productive areas.

- Quote, "The United States government should also take steps necessary to deal with potential disruptions in world oil markets. These steps include increasing strategic petroleum stocks and eliminating controls on oil which discourage the private sector from dealing with disruptions effectively."

  Response: The private sector is concerned with continually increasing profit for its stockholders and investors. The private sector is not in any way charged with the responsibility of meeting the needs of the poor, nor is the private sector charged with the responsibility of the general welfare of the public. To impose such a responsibility on the private sector is to introduce inconsistency in the concept of free and private enterprise. It is the responsibility of the federal government to ensure that the needs of the poor are met.

- Quote, "The United States government should also take steps necessary to deal with potential disruptions in world oil markets. These steps include increasing strategic petroleum stocks and eliminating controls on oil which discourage the private sector from dealing with disruptions effectively."

Response (Continued): A first step that the United States government should take to deal with potential disruptions in world oil markets is is to alleviate the great dependency of the U.S. on foreign oil. This requires that the federal government actively participate in the promotion of energy production, energy conservation, and alternative fuels.

- Quote, "The level of oil imports per se is only a rough indicator of the Nation's progress in solving its energy problem. The welfare of the American people is inextricably linked to that of people in other countries, so the United States cannot insure its own security by a reckless attempt to eliminate imports."

  Response: The national security of this country is paramount. Thus, domestic energy production and conservation is essential to that security. A weak link in our security is our over-dependency on imported energy. It is impractical to totally and dramatically eliminate imports. However, a policy must exist to reduced our total dependency on such imports. Availability of oil imports is unreliable and subject to the political whims of despots and fanatics over which we have little, if any, control. While it is true that our welfare is linked to that of people in other countries, we cannot rely on other countries for our own security. The U.S. can only secure our own security by minimizing reliance on other countries for essential needs.

- Quote, "Energy is an international issue and so the American people have an interest in seeing that other countries establish sound energy policies."

  Response: The United States must first establish and implement its own sound energy policy/policies, then monitor and evaluate those policies on a consistent basis, determine the success and short-comings of those policies to eventually demonstrate and share these policies with other countries. In so doing, the U.S. must be ever mindful that other countries that we are influencing are nations that have governments that guide, promote and implement national policies and goals imposed on their private sector.

RESPONSE TO GENERAL QUESTIONS IN EPA ISSUE PAPER, PAGE SEVEN

- How are private firms, state governments, and local agencies preparing to assume their new responsibilities?

  Response: Given the new direction of federal energy policy and the decentralized nature of energy conservation, there is no provision for direction, support or authorization of private firms, state governments and local agencies to assume the responsibilities eluded to herein. The new policy does not offer a plan or the funds for the these agencies to assume the responsibilities.

* Which activities will get priority from public and private organizations and what will be consequences if some activities are discontinued?

  Response: It appears that public/private organizations will give priorities to those activities which serve their own self-interest because there will be no national priority. It further appears that activities that attempt to meet the essential needs for the poor will be placed in secondary or tertiary levels of concern, if not totally discontinued. Current energy conservation and energy assistance activities are inadequate to meet the needs of the poor and the general public and should have been expanded. Additional elimination and decentralization of these activities will have an adverse effect on the national energy goals of the 1977 Act and will adversely impact upon the economy and the national security. Adversely upon the economy because the public will continue to overconsume and a large segment of the poor will be unable to pay the cost of such heavy consumption. Adversely upon the national security because consumption will be at a rapid rate while conservation and domestic production will be curtailed. Consequently, we will be vulnerable to international forces over which we lack direct control.

* Have any new initiatives or opportunities been created as a result of the shift in Federal energy conservation programs?

  Response: There has been a notable decrease in initiatives because the opportunities and incentives have effectively been removed. A good example is the federal government's reneging on a commitment to alcohol fuels projects. Elimination of financing in alcohol fuels projects and other alternatives to imported fuels has killed internal control of an extremely viable means of production which itself could generate a series of new initiatives and opportunities that would create vast employment opportunities and in so doing stimulate the economy. The elimination of the initiatives and opportunities that were created through the weatherization program and the industry that sprang from it have been lost. Moreover, the CETA workers who were trained out of weatherization funds will now be out of jobs. That constitutes a waste of governmental funds because the jobs are now unavailable. The second waste is the loss of available "trained" manpower to the ranks of the unemployed, while the public need for weatherization services escalates with the ever-rising cost of energy.

* What is the Federal government's proper role in this period of transition?

Response: The proper role of the federal government is to postpone the hasty elimination of programs already in place until such time as the new programs have been drafted and potential benefit determined. As previously stated the assumption that lead to the sweeping eliminations of programs are untested. Thus, the proper role of the federal government is to insure that there is no gap in services, benefits or progress in the transition of ideologies or approaches to a very serious matter of national concern. The hardship that will inure to individual citizens as well as to our conservation and security needs does not justify such an untested course of action.

Under the Department of Energy (DOE) Act the federal government has mandated that a study should be held to assess the government's energy program. The federal government should properly and fairly postpone any massive changes until such time as the mandated study has been completed. Changes should then be made on the basis of the findings of that study which is to be completed no later than January 15, 1982.

* How should the Federal government evaluate and monitor the effects of its new energy policies and program changes?

Response: In order to monitor the effects of new policies it is first necessary to monitor, assess and evaluate existing energy policies and programs in order to provide for an "objective standard" of reference. New policies and programs should then be measured or compared to that reference standard and to national needs and goals.

STATE AND LOCAL CONSERVATION ACTIVITIES, EPA ISSUE PAPER, PAGE 12

* Which of the functions formerly performed by Federally funded programs are likely to be picked up by the state energy offices? By cities and counties? By the private sector?

Response: The State of Michigan, as a point of reference, relies almost exclusively on federal government funding of the State Energy Office. These funds have been inadequate to permit any serious planning or activities by the State Energy Administration. The current funding priorities of the State of Michigan are prisons and the correction systems, mental health, and social services. Thus, it is extremely unlikely that the State of Michigan can take up the massive slack that will be created by the sweeping eliminations in the energy area.

* Which of the functions formely performed by Federally funded programs are likely to be picked up by the state energy offices? By cities and counties? By the private sector?

No major cities or counties have established an energy office, and the same are already short-funded and have relied heavily upon federal funding in the past for essential services. Thus, it is not likely that the local entities will be able to take up the slack. The private sector involvement is limited to the utilities' participation in the Residential Conservation Program. Their effectiveness will also be curtailed because the federal weatherization and fuel assistance plans which helped low-income people conserve energy and subsidize energy costs have now been eliminated.

* What will be the effects if a state decides to phase out its energy office? Which activities will be discontinued?

Response: The State Energy Office is already unfunded and had only provided scant information and limited technical advice. Almost all of their activities were with utilities. However, they lacked sufficient staff personnel to effectively monitor the utilities' residential conservation activities. To eliminate the state office would mean that the public would be left with no representation or means of becoming involved in the national energy effort. Since effective energy conservation relies primarily on the human element it would be cost effective to expand upon the foundation that has already been established, especially if the federal government intends to withdraw from its role in the energy effort. It is imperative that the State of Michigan be funded to take up the slack.

* How can local governments transfer the state experience and resources to the development and implementation of local programs?

Response: The state experience cannot be transferred to local government unless accomplished by federal government fundings, support, and progressive monitoring and evaluation.

* How will the 21 states that have biennial budgets adapt to the new Federal priorities? What is the consequence of their operation on a biennial budget likely to have on this adjustment?

Response: Michigan has already adopted its "annual" budget, and the budget did not adapt to the new federal priorities as there were no funds appropriated to take up the slack. Because 21 states or 42% of the states do have biennial budgets is a further indication that the elimination of weatherization and assistance programs ought to be postponed in order to allow the entire 50 states the opportunity to reassess their priorities so as to minimize wholesale hardships and suffering.

- How can information, experience and resources be shared regionally after the discontinuation of the DOE Regional Offices?

  Response: If by elimination the DOE Regional Offices the system of regionalism itself would be destroyed the sharing of information by regions would cease to exist. Thus, the DOE Central Office would have the additional responsibility previously held by the Regional Offices. Information and direction as to the goals is a federal government function that cannot be delegated. A contact person or unit by state in the national office plus a toll free telephone number might be a pragmatic alternative.

- Can alternative funding source be found for conservation activities?

  Response: Conservation is essential to our national security and has been defined as a national goal. Thus, conservation activities and the funding for such is the federal government's responsibility. Perhaps, after ten or fifteen years following the implementation of all of the measures essential to conservation (including alternative sources) have taken root then these activities themselves will lessen the need for governmental funding. At the present time the federal government must take the lead as it is a matter of national security and public welfare.

WEATHERIZATION AND LOW INCOME ENERGY ASSISTANCE, EPA ISSUE PAPER, PAGES 13, 14-15

- What governmental department? (Page 13)

  Response: On the issue of what governmental department will administer the program is not as essential as the continuation of services, except that the federal government should adequately fund whichever department is designated as administrator. There should be no break in the services.

  However, the state block grant approach will not be effective because many of the states are not sufficiently prepared to deal with the subject of energy. Their priorities are similar to Michigan's which is one of the most advanced states, i.e., trying to deal with people who are physical menaces to society and/or unable to accept the massiveness of the responsibility that goes with the national goals of energy. Here again there should be a period of adjustment and preparation before the states are given this responsbility. To thrust it on the states at this point in time would be a peril to our national security. It should be remembered that national security is a federal and not a state responsibility.

Funding mechanisms and structural issues

- In light of the proposed changes, how can the nation maintain an effective low income weatherization program?

Response: The elements of a low-income weatherization program are "labor", "materials", "management", and "training". All of which cost dollars. Low-income weatherization by definition means service to people who do not have money to buy such service themselves. The elimination of the CETA program along with the reductions from current funding levels mean that the nation will not be able to maintain an effective low-income weatherization program.

* If weatherization is transferred into HUD Community Development Block Grant, what agencies would be effective sponsors at the community level?

Response: If transferred to HUD Community Development Block Grant then HUD would have to determine the effectiveness of the responsibility. They should use a criteria and an appropriate monitoring and evaluation system that would be comparable to the standards they use to approve, certify and monitor HUD approval comprehensive housing counseling agencies.

* How can problems involved in transferring the program from one agency to another be minimized?

Response: The problems can be minimize in transferring the program into one agency to another by incorporating the existing operations into the new agency for one year. During the year the successor agency would establish its own standards as to sponsor criteria and performance levels. Unqualified sponsors will be given a reasonable period of time to phase out their activities.

Implementation issues

* If a state decides to phase out Community Action Agencies, how can their resources and experience be transferred to the new weatherization sponsor?

Response: Community Action Agencies that have the proven capabilities should be allowed to continue under the new standards established by the successor department. Where such is impossible the Community Action Agency personnel and resources should be available and utilized by the succesor agency.

* Should LIEAP funds be utilized for weatherization? How can the LIEAP program coordinate its activities with the weatherization program at the state and local level?

Response: It would be a dilution of the purposes of LIEAP funding to allow same to be used for weatherization. Although the same agency might handle same, separate funding should be available for weatherization, and under no circumstances should the level of funding be reduced. I would grant that weatherization and LIEAP all have to do with energy, but more importantly, they have to do with housing and could be effectively administered by a single entity perhaps reducing administrative costs. This would in effect increase the amount of money available for direct services.

Essential to the success of all of these pograms is "counseling" in order to insure that the gains are not short-termed and to create an effective conservation effort, because conserving by nature is a human function.

* What is the most equitable and cost-effective weatherization program? Should the Federal government continue to provide substantial assistance ($1,000-$2-000/unit) to a relative small number of houses? Or, should the program be restructured to provide minimal weatherization ($200-$300) to a larger number of units?

Response: Based on our experience and observation the Federal government should continue to weatherize the complete home. Complete weatherization would be wasteful because there would be no real energy savings. It would be money thrown away. The sensible thing would be to provide sufficient funding to weatherize the homes. If given a time-table we should adopt a plan to weatherize all of the twelve million low-income homes with five years, a structured approach must be followed. Hence, the bandage on the gaping hole approach would serve no beneficial purpose, nor would it lead to the achievement of the state goal.

* How can CETA workers be retained in the weatherization industry?

Response: The program referred to in the previous question should include CETA workers. A reduction in the cost to retain these workers could be realized through the expansion of the weatherization program, based on the scale and the amount of activity that would be generated. Hence, it is obvious that only through the infusion of dollars into the low-income weatherization program can CETA workers be afforded the opportunity to participate in the weatherization industry. The private sector cannot provide sufficient job opportunities that would result in the assimilation of the vast number of CETA workers. Additionally, the work experience gained by the CETA workers will serve to make them more job ready if jobs in the private sector to come into being. The net effect would be to reduce the level of requisite support from the government.

* What information is necessary to enable the Federal Government to monitor and evaluate the effects of changes in energy policy and conservation program? For example, should DOE monitor whether state and local agencies continue important conservation activities? Whether private firms continue conservaton R&D? Whether homeowners continue to invest in conservation improvements?

  Response: First, it's necessary to monitor the existing energy policies and conservation programs. Without a knowledge and understanding of the successes or weaknesses in the current program the Federal government will be able to determine the effects of the proposed changes in such policies and programs. The question posed as to whether DOE should continue to monitor the continuation of various programs is less important than whether or not we have made an acceptable level of progress toward the national goals of conservation, service and self-sufficiency.

* What types of regular monitoring and special studies would be most appropriate for obtaining this information?

  Response: Again, since the national policies of energy are rather new it is important to determine, assess, monitor and evaluate what is and what has been.

* How can this information be gathered without placing a major paperwork burden on respondent organizations?

  Response: The results of monitoring and evaluation of current programs will provide a guide as to policy needs for future programs. This is especially critical since the proposed new changes will be based primarily on assumptions and such programs have not been clearly defined to the point where a standard for success or failure has been identified. We should take advantage of information already available through past activities and use this information to design the programs and policies that meet our national goals. Therefore, the nature of information needed will be dictated to a large degree by identified needs.

* Regarding the Sunset review, what are the most important questions in the Sunset Provisions? What would constitute adequate responses to these questions? What types of analyses should the responses contain? What types of data should be include? What level of detail is needed?

Response: The most important aspects of the review are those that have to do with the objectives for which the program is being established, specifically, (2) an identification of the objectives intended for the program and the problem or need which the program was intended to address; (6) an assessment of the degree to which the original objectives of the program have been achieved, expressed in terms of the peromance, impact, or accomplishments of the program and of the problem or need which it was intended to address, and employing the procedures or methods of analysis appropriate to the type or character of the program; (7) a statement of the performance and accomplishments of the program in each of the previous four completed fiscal years and of the budgetary costs incurred in the operation of the program; (8) a statement of the number and types of beneficiaries or persons served by the program; (9) an assessment of the effect of the program on the national economy, including, but not limited to, the effects on competition, economic stability, employment, unemployment, productivity, and price inflation, including costs to consumers and to businesses; (10) an assessment of the impact of the program on the Nation's health and safety; (13) an analysis of the services which could be provided and performance which could be achieved if the program were continued at a level less than, equal to, or greater than the existing level; and (14) recommendations for necessary transitional requirements in the event that funding for such program is discontinued, including proposals for such executives or legislative action as may be necessary to prevent such discontinuation from being unduly disruptive.

I feel that all of these items are important because they address essential criteria that is necessary to determine whether or not an energy policy is needed and will show the success and failures of such policy. Perhaps, most importantly, they will advise us as to whether or not the assumptions that lead to the proposed changes possess the validity that would warrant such changes.

Again, I would stress that the four years of data already compiled should be analyzed. This information must be augmented by survey-interviews of actual consumers and participants both at local and state levels. With four years of activity behind us we will have empirical data that we can use to affect policies and program changes that would make it unnecessary to rely upon assumptions and its many many variables about the energy market and the behavior of firms and individuals within it.

BILL HORNE
Deputy Director for Conservation
State of South Carolina
Office of the Governor
SCN Center, 11th Floor, Suite 1130
1122 Lady Street
Columbia, South Carolina 29201

A federal energy policy is most important in providing direction for both energy suppliers and consumers. We have already experienced some of the potential problems associated with rapid price increases in energy. Inflationary pricing policies have affected almost all goods and services produced. An effective energy policy which allows time for development of U.S. energy resources is needed to help overcome and prevent future problems such as inflation.

Expansion of our economy, unstable conditions in the Middle East, balance of payments and controlling inflation should be addressed in energy policy development. We must also consider long term objectives. If we continue to have dramatic price increases in energy then control of inflation and expansion of our economy will be more difficult to obtain. Stable energy prices, however will assist in both controlling inflation and promoting growth.

An energy policy ought to seek and encourage stability in price and adequate supplies of energy.

In the immediate future conservation or efficient utilization of our energy will help stabilize prices. As we expand our efforts to produce more energy, efficient utilization can make otherwise wasted BTU's available for growth. Conservation can play an important role as a source of energy in the period ahead as we develop our sources.

How we achieve more efficient utilization in the market place is important. Large private firms such as IBM have already demonstrated an ability to reduce BTU consumption and expand simultaneously through more effiicient utilizaiton of energy.

In our State the small and medium size firms without engineering staffs do not have similar track records in conservation. Commercial consumption of energy in South Carolina has increased much faster than industrial or residential in the last twenty years. With substantial industrial development occurring we have been able to produce more efficiently. Industrial firms more often than not have expertise available in house. Just recently, however, we had a request from an independent food store owner to advise him on how to become more energy efficient.

Upon examination we simply find conservation expertise is needed in certain areas of our economy. Also a strong conservation ethic ought to be supported. Without that support we can expect less efficiency and an extrapolation of past consumption trends in some areas.

Moderating price increases can be accomplished through conservation as presently demonstrated in gasoline. Consumption is down about 170 million gallons annually compared to 1978 in South Carolina. As we expand energy production capabilities stable prices will assist in efforts to expand the GNP and control inflation.

Without national direction it is difficult to determine the various policies which may be developed by states and local agencies to impact energy. One could expect ednergy producing states to view policy differently from consumption only states.

In summary, effective utilization of our energy resources in the next few years should be a national goals. The benefits are tremendous and include: assistance in controlling inflation, balance of payments are favorable with less imported oil, wasted BTU's may be diverted to expansion of the GNP, our current supplies last longer and provide valuable time for the U.S. to develop energy resources and government should be able to reduce its role in assisting with payments of energy.

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J. A. HUNTER
Manager, Conservation Systems
San Diego Gas and Electric
P. O. Box
San Diego, California 92112

San Diego Gas and Electric would like to provide a written statement in response to the EPA Hearing on the Federal Energy Conservation Programs.

First of all, the reduction of the Federal funds for the Energy Conservation Programs, except for RCS, will place a greater financial burden on our local community agencies and on our Company. There are three different funding programs for the low-income and senior citizens in the San Diego area. These funds come from DOE, our utility company, and HUD (in the form of Community Block Grant Money).

In regard to the RCS Program, the effects of the reductions would be felt by the California Energy Commission. The CEC does receive Federal funds for this program. These funds are used to award contracts for different projects, some administrative costs, etc. If the funds are eliminated, the CEC would either have to pursue alternative funding sources, or eliminate the activities which are no longer funded.

The RCS funding cost would affect the local level differently. In a general sense, our Company would be able to do an audit for less money without the funding. The State Plan could then be modified according to our community needs. Therefore, the audit could be streamlined accordingly and the rates reduced.

SDG&E wants these comments to become part of the permanent record.

Due to high utility rates in the San Diego area, we are always pursuing ways to stabilize our rates.

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WAYNE JOHNSON, Chairman
Government Relations Committee
Southern Gas Association
4320 LBJ Freeway, Suite 414
Dallas, Texas 75234

The Southern Gas Association, which represents the interests of nealy 100 natural gas, transmission, distribution and production firms and the South and Southwest is pleased to present these comments for consideration by the Environmental Protection Agency in its continuing analysis of Federal Energy Conservation Programs.

At its most recent meeting, the Board of Directors of the Southern Gas Association adoptd a resolution supportive of an emerging trend in federal energy policy to decentralize many programs which were formerly conducted at the Washington level and return authority and responsibility for these programs to various state and local agencies. The AGA Board urged our member transmission and distribution companies to work closely with officials of the various state agencies in developing effective programs and implementation plans in such areas as energy conservation, weatherization, low income fuel subsidy programs and other energy related programs designed to help citizens use energy more wisely.

We share a conviction frequently expressed by officials of the Reagan Administration that the price paid for energy is the largest single determinant in controlling it's use. The supplementary information which accompanied the notice for this EPA analysis includes the statement that current changes in federal energy conservation programs are based on projections that rising market prices of energy commodities will enhance conservation efforts and we certainly agree with the determination.

Inherent in our support for this posture is the belief that state and local agencies are in the best position to determine effective programs and policies for the citizens of their particular states. Empirical evidence exists to confirm our belief that local officials are most responsive to needs of local taxpayers and perhaps most responsive to the wishes to local citizens in developing programs which reflect those citizen's desire for certain levels of state program funding and activity.

One example of the critical need for local authority and responsibility can be seen in the past winter's Low Income Energy Assistance Program (LIEAP). Title III of the Windfall Profits Act created a Home Energy Assistance Program designed to provide funds to the states to be distributed to low income families to help offset the rising cost of fuel. The stringent nature of the language in Title III plus the natue of the regulations promulgated by the Secretary of Health and Human Services resulted in program regulations which were in direct contradiction with existing state laws in at least seven of the states represented by the Southern Gas Association.

As a result, natural gas utilities in those states found themselves in a dilemma: their desire to participate in this low income subsidy program was thwarted by existing state regulatory commission orders or by existing state laws. The single issue which brought this matter to our attention was one of termination of utility service which is a responsibility of the state utility regulatory authority. However, the federal government in this example overrode existing state standards in favor of a national standard on termination of service. Had the new policy of decentralized control over federal programs been in effect, natural gas companies in many of our states could have participated in the program thus insuring that funds allocated for fuel subsidy payments could have gone directly to the energy supplier. This is but one example of an instance where strict federal regulations can work to the detriment of program goals.

Perhaps a more important reason for supporting a decentralization of federal energy conservation activities lies in the fact that Americans are conserving all forms of energy. Major oil companies have reminded us that nationally our use of gasoline is declining. We have seen evidenced from major electric utilities which suggests that the growth in electric load is increasing at a slower rate than was experienced in the past few decades and certainly in the first half of the 1970's.

Customers of natural gas utilities have reduced their consumption of America's cleanest burning fossil fuel also. Residential customers, between between 1970-1980, have reduced their use of natural gas by some 15 percent. Industrial customers of natural gas utilities have reduced their energy consumption by 11 percent. (Source: American Gas Association, 1981).

In conclusion, conservation is occurring in the marketplace in proportions which are not directly related to level of federal program activity urging energy conservation.

In this period of policy review and determination, we suggest the federal government can best serve the American citizenry - both private and corporate - by transferring authority and responsibility for energy conservation programs to the state agencies and to the citizens themselves. At most, federal participation should be advisory to the primary role of the state agency. For example, federal programs might suggest areas for state consideration in formulating programs for energy conservation. Federal agencies might advised private industry as to the specific cost savings inherent in various conservation activities. Finally the federal government might assist local governments - both state and municipal - with advice and counseling on the best approaches to be taken by local governments in urging energy conservation by their citizens. All of these programs can be conducted in an advisory nature and do not require a vast bureaucratic system of rules and program regulations which must be adhered to by local governments and private corporations.

Of primary consideration is the proposition described earlier that rising costs of energy to business and to the individual homeowner is a much more effective energy conservation promotional device than is all of the federal, state and local programming.

Our economic system is based on the premise that when goods cost more people use less and we congratulate and support the Environmental Protection Agency in its expression of this overriding principal.

Thank you for the opportunity to submit these comments and we stand ready to assist the agency in any way we can to fulfill your objectives.

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SUSAN KELLER
The Community Network for
Appropriate Technologies
1321 Cleveland Avenue
Santa Rosa, California 95401

I wish to urge that action be taken to reinstate and expand energy conservation programs. Facts prove: 1) energy costs continue to soar; 2) present energy consumption habits make us politically vulnerable to other nations; 3) conservation is a much wiser investment than the development of new power supply; and 4) up to 40% of energy now consumed is wasted.

It is imperative that conservation programs receive continued Federal support. Education and community outreach are essential if we are to impact the community. Grants to the low-income community as a means for getting conservation measures in place is of critical importance. Studies prove that not only does the investment in conservation cost much less than the energy supply offset by such action, but such action helps to short-circuit the cash drain on the local economy to a great extent.

From 1973 - 1979 energy costs increased 171%. The next several years will undoubtedly be much worse. Local governments and communities are doing a great deal toward conservation, but federal assistance is needed to insure a rapid transition toward a sustainable energy future. Such an investment in efficiency of all support systems makes economic good sense no matter who is talking.

The Reagan Administration Energy Policy (supply-side mentality) is totally counter to the economic, social and political well-being of this nation. National Security rests in our ability to conserve resources. Please re-evaluate energy policy in the interest of the American people.

PATRICIA KELLY
700 W 17th Street
Pueblo, Colorado 81003

The changes in the proposed 1982 Reagan budget for energy conservation programs over recent policy are great. I can agree that there is a need to allow petroleum-based energy sources to seek a real market level. We would not be a nation of energy hogs and had such prices not been artifically controlled. We would now have sufficient stock of energy efficient houses and autos.

The recent price increases have caused American industry to lead the way in our country to internally efficient operations. However, the homeowners do not have the engineer or architect readily available to advise them as to cost effective expenditures for conservation measures. The lower the income of the householder the less likely that that person has technical expertise in conservation of energy. Even more puzzling to them is the evaluation of alternate energy sources. We just don't have long experience in solar retrofit or wood stoves in city homes. Yet, many actions, such as installation of solar window boxes or attached greenhouses are ideal for the low to middle income do-it-yourselfer. That person needs some technical assistance and some confidence that the work and expenditures involved are wise and effective.

There is an important consideration here for the nation as well as the householder: the barrel of oil thus saved for next winter will be saved in 1983 and 84, as well as 1990. The Energy Extension Service provides the needed technical expertise. It would be a shame to phase it out.

I work closely with our local EES office as chair of the advisory committee. Our total budget is $21,700, $19,200 of it federal money. On that we served 3,200 people in the past year. Like many middle sized American towns, we have a high rate of home ownership. Many of these home owners are do-it-your-selfers. With inflationary pressures, many more people are becoming handimen every day.

The outreach programs of EES workshops, its technical printed material, its onsight evaluations as invaluable these people. This individualized service is not available elsewhere.

I am also concerned about what the program cutbacks and cancellations will do to the truly poor. Weatherization and LIEAP must continue or frightening hardships will be experienced by them this winter. The locally projected increase of 25% in natural gas costs this coming winter added to the 275% increase sinced 1975 is a cruel blow to the low and fixed income citizen. They must have somewhere to turn.

My town of Pueblo and state of Colorado seem to be fairly typical of the rest of the country. In Pueblo this year we will receive $19,200 for EES, $2,485,000 for LIEAP, $11,917,957 for Weatherization. With city and county combined incomes of $34,000,000 in locally generated funds, there is little hope that they would absorb such costs and continue their customary services, particularly since they will be faced with cancellation of other human service programs.

The state of Colorado has an Office of Energy Conservation designated by the governor. However the legislature has never recognized it in funding. So, it has been dependent upon SECP and administers. I detected no change in the attitude of our legislature toward this activity this year.

Energy conservation is an important national goal. It is a ready source of energy to be used in other places. It should not be lost sight of in the present budget slicing efforts.

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WILLIAM C. KINARD, P.E.
1576 S.W. Dellwood Court
Portland, Oregon 97225

I certainly subscribe to the overall rationale for new directions in our Federal Energy Conservation programs; however, we do not want to overlook the merit of some Department of Energy programs, particularly programs that have advanced research and development benefits. I particularly subscribe to allowing market forces to induce conservation in each end use sector--not to select and promote favored sources of energy.

Weatherization of the homes of the needy benefit society in several ways--quite effective as compared with paying portions of energy bills year after year. Weatherization grants based upon cost-effective actions by regions probably should be limited to insulating ceilings, caulking, weatherstripping and floors over unconditioned spaces.

Here in the Northwest, investor-owned utilities in general are providing interest-free loans and rebates to encourage conservation as these programs are less expensive and seem to be more acceptable to the consumer than the development of new sources of energy that are required to assure an adequate supply. My concern is that we may depend too much on conservation and the lead time required to receive approval and complete construction of power plants.

It appears that conservation will continue to get priority from private and public organizations and the marketplace will continue to be effective. Initiatives and opportunities that are created by the private sector will continue, and public spending should be limited to research and development, particularly in the long-term technologies. Care must be taken not to involve political and sociological problems under a scientific disguise.

Out of recommendations came the proposals under the Schools and Hospitals Program to include only audit and technical assistance. This is an example of prudent use of funds. Development of less sophisticated software programs to audit commercial and small industrial buildings will increase the ability of utilities to offer audits that will encourage operation and maintenance practices; investments and, where required, additional engineering and economic evaluations.

Research activities—such as that accomplished by Lawrence Berkeley Laboratories—should continue, but care should be given to not duplicating research by private enterprises. Example: There appears to be a need for alternatives to degradation of the indoor air quality of residences because of weatherization-such as an effective heat exchanger. Solution: Research available products and their impact upon the health and safety, alternative designs and provide case histories.

The need to research the impacts of existing regulation—such as the Clean Air Act—as it also impacts the supply and cost of energy. We need to apply research funds to enable enterprises to fully utilize coal and nuclear resources in our country.

It seems as though people are willing to make expenditures for conservation if they know enough about alternatives, costs and savings. The distribution of facts in case histories by the universities and utilities will encourage conservation by all classes of users.

Local governments are capable to responding to the needs of the constituents, whether it be for conservation or a new fire truck or library. A private company initiated the zero-interest loan for conservation measure measures. I hope workers will shift from government positions to positions in research and defense.

I believe we need to be concerned about funding sources for conservation activities. One of the major problems of commerce and industry is funding sources at a reasonable rate. Inflation and high interest rates are factors. Reduced federal spending should help stabilize the rates. Any federal funding should be in the form of block grants for energy assistance to the states.

New residential construction is virtually nil. Lower interest rates will allow new ideas—passive solar and daylighting—to be incorporated into the structures. Pacific Power & Light Company plans to monitor passive solar homes in its promotion of passive solar energy saving homes.

The President's program has placed great emphasis on preserving social welfare programs that serve the truly needy. This is a forward step.

I appreciate the opportunity to present written testimony.

THOMAS H. D. MAHONEY, Ph.D.
Secretary of the Massachusetts Department
of Elder Affairs
38 Chauncy Street
Boston, Massachusetts 02111

I very much appreciate the opportunity to offer testimony on the Federal Conservation Program on behalf of nearly one million older persons in the Commonwealth of Massachusetts. We know well that the waste of energy is of as much concern in other states and in other parts of the nation, and for that reason, I am pleased to report on some of the ways in which Massachusetts has participated in conservation efforts.

Before outlining some of those programs, I believe it is important to mention the added significance which conservation programs now hold. Our national administration seeks to reduce inflation, increase productivity, and enhance our image abroad. Preservation of our energy resources will, without doubt, strengthen the ability of our entire population to meet a meaningful standard of living, to improve our economy, and to reduce our reliance on foreign energy sources, improving our position worldwide.

Massachusetts is a state in which winter fuel supplies are of major concern. For our elderly and handicapped, conservation programs will allow us to expand our fuel assistance dollars. Last winter, many elders had to use up to one half of their annual incomes for heating their homes. The price of a gallon of heating oil, a fuel upon which most homes depend, rose 40 cent to $1.30 per gallon. By May 30, 1981, 41,000 elderly families had applied for fuel assistance under the federal guidelines.

As one state which appropriated its own funds for fuel assistance, we received 11,000 additional applications from those whose incomes were above the national guidelines, yet who could still demonstrate a need for assistance. In fact, the numbers of those who seek help increase yearly.

If the new philosophy of federal budgeting is adopted, the scope and focus of conservation efforts may change. Block grants, in which the energy conservation programs may be included, could be among the competing interests unless the Congressional conference committee resolves the issue. Last year, $189 million was provided for the Department of Energy Weatherization Program. Of that $558,000 went into energy conservation grants with Massachusetts awarding more than $225,000 for supplementary conservation grants.

One of our programs featured an educational component with a goal of reducing overall energy consumption by 5% through five mandatory programs:

- car pools
- thermal and lighting efficiency information
- initiating the "right turn on red"

- publishing informational materials
- initiating governmental coordination

Our energy extension services included more than $417,000 for special projects (and, in addition, we provided $25,000 more with "carry over" funds) the Massachusetts Department of Energy has given our communities technical assistance through self-help and special "low-income unit" programs.

What is of great concern at this particular time is the added loss of C.E.T.A. funds and the reduction of public service employment programs and the Youth Employment Service. Our program of weatherizing one thousand homes per month has been lost since funds were exhausted on June 30 at the height of the summer season, an ideal time for weatherization. Block grant funds to renew the effort would not be available until last fall, but were we to attempt to implement the program immediately, we would still face competing interests for a block grant award reduced in effect by 25% from the preceeding year.

We all realize that federal cuts mean local reductions, and we have already begun to note, with the added restrictions on state spending which have been implemented in Massachusetts, that the private sector will, even if it is of a mind to help, be unable to pick up but a small part of the balance. We are dealing, for the most part, with the hard world of "market rates", and I do not believe that the private dealers will find it in their interest to provide for low income households at this time. This is particularly upsetting to our Massachusetts economy since we produce a minimum of our own energy needs, diverting expenses for oil and natural gas to providers elsewhere.

Still, our record of promoting conservation in Massachusetts is commendable. In spite of fiscal restraints, I believe we are doing all we can. With the creation of the Executive Office of Energy Resources in 1979, Governor Edward J. King has established an Energy Bond Program to facilitate conservation in state buildings and public housing throughout the Commonwealth. Some elderly housing was designed with solar energy components. However, this agency, whose reputation and credibility in Massachusetts and New England is quite high, will see a reduction in the federal share of its total budget from 68% to 32% by fiscal year 1982.

I believe that Governor King's six point state program to lower fuel costs of public utilities is one worthy of mention. It involved the following components:

- Public investigation of utility planning for conversions to coal.
- Mandated utility financing programs designed to offer zero-interest loans to residential heating customers for home weatherization.

- Restructured residential rate structures designed to make utility rates more equitable and more conducive to conservation than to consumption.

- Development of an agreement to purchase residual fuel oil directly from a Venezuelan Government source.

- Increasing the potential for construction of new high voltage transmission facilities through imports from Canada.

- Participation in the signing of a contract with Trans-Canada, Ltd. to purchase 185 million cubic feet of natural gas annually to reduce dependency upon O.P.E.C. sources by three million barrels per year for ten years. This agreement, reached on October 14, 1981, involved nine New England utilities and five utilities from New York and New Jersey.

I am also happy to report on steps in which our residential Energy Consumption Program has exceed the requirements of the Department of Energy as to minimum standards:

- all utilities are required to participate,

- audit services are coordinated among utilities,

- by January, 1982, services will be available in all residential buildings including large apartment houses,

- auditors help customers learn to install some of their own weatherization materials.

We expect the "ECS" program to provide its one hundred thousandth home audit this year, 35,000 more than predicted. For this success, we must pay tribute to a well developed statewide outreach program.

I have established a Winter Assistance Task Force in which representatives of our 23 Area Agencies on Aging meet with my staff at our Boston office. This group, which meets monthly throughout the year, recommends a better pairing of fuel assistance and conservation measures. If we are to show meaningful foresight in this area, the linking of these two components must be strengthened on a permanent basis. At the same time, we are putting considerable emphasis on the federal income tax credits available to those whose weatherize. I urge that the Federal Energy Conservation initiate strong national programs of public education, as we are confident that the effort will lead to more meaningful steps on the part of public and private sectors, businessman and private homeowner, employee and tenant.

These hearings related to the Federal Energy Conservation Program provide an ideal forum for an airing of ideas, interests, and common efforts. While I speak for the elders of Massachusetts, I am sure that we are all acting on behalf of more than 25 million older Americans who are sure to gain great advantage through a comprehensive and renewed conservation program.

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Montana Power Company
40 East Broadway
Butte, Montana 59701

The following testimony has been prepared in response to the request from E.P.A. to carry out its responsibilities under Section 11 of the Federal Nonnuclear Energy Research and Development Act (Public Law 193-577). Pursuant to that responsibility, E.P.A. is asking comments on the possible directions of a new Federal Energy Policy based upon the concept of "free market" economics where rising prices will enhance conservation efforts and the private sector and the state/local government will carry out activities that were previously supported by the Federal Government.

In an attempt to address the changes in these Federal programs, comments were requested on the following issues:

1. How are private firms, state governments and local agencies preparing to assume their new responsibilities?

   The role of private firms, specifically the investor owned utilities, will be enhanced under the proposed new directions of federal energy policy. Removal of the inordinate regulatory burdens imposed in the past, will allow those programs that involve conservation of energy in the residential sector to be more cost effective. D.O.E.'s desire in the past to be somewhat paternalistic in treatment of customers of a utility involved in conservation programs, produced many non cost-effective burdens which were ultimately paid for by the customer.

   The new direction of Federal energy policy will allow the utilities to develop and implement cost effective conservation programs. These programs will be assisted by the proper price signals being sent to utility customers via other deregulation programs of the Federal government. Attempts in the past using incentive conservation programs in conjunction with artifically regulated low energy prices, sent mixed signals to customers and did not generate the amounts or kinds of conservation thought possible. Energy prices that reflect the true cost of finding additional resources, act as a powerful inducement for customers to adopt (when given the proper information) conservation methods that work best.

   Private utilities have in the past and will continue to lead in energy conservation efforts. In the Northwest, the Investor Owned Utilities have led the nation in implementing innovative, cost-effective conservation programs that have been used as models for government sponsored conservation programs. The customers of these private utilities have responded overwhelmingly to the programs and the conservation ethic that these efforts have generated has been transferred to individual life styles.

Programs like the R.C.S. program have been in place in the service territories of most of the Northwest Private utilities long before it became fashionable nationwide. There is no reason to think that such innovative, cost effecive utility programs will not continue under the new direction of Federal energy policy.

2. Which activities will get priority from public and privated organizations and what will be the consequences if some activities are discontinued?

The major activities that will get priority from the private sector (Investor Owned Utility) will be the continuation of cost-effective conservation programs and the development of new programs that will maintain the leadership of the private sector in energy conservation. Things such as the Class A energy audit for customers, informational services geared to the needs of the customers, customer protection in conservation purchases, development of energy resource technologies that will serve to continue the transition from fossil fuel resources to sources of a renewable nature are among the many programs that will receive priority.

Discontinuance of the research and development of renewable resource technologies may impair the realization of energy from these sources. For example the wind program was seen as an important tool to provide the nation with units capable of utility sized generation capacity. Without the funds available for research and development on these types of technologies and some sharing of the risk by the governmental sector, further delays may be caused. For this reason, adverse impacts from reduced government expenditures may be felt in the private sector.

3. Have any new initiatives, opportunities or efficiencies been created as a result of the shift in Federal energy conservation programs?

Possible revisions to NECPA will potentially allow the utility to become more involved in the marketing of conservation and renewable resource measures. This would provide an opportunity for the utility to offer the customer a "one-stop" conservation and renewable resource service. The time to get a customer to act on conservation recommendations at the time is high and experience has indicated that following departure of the auditor, interest usually wanes and many customers do not proceed with the recommended measures.

4. How can the Federal Government assist in this period of transition? The best help that the Federal Government can give in this period of transition is of a technical and research nature. More work needs to be performed on the effects on "indoor-air-quality" following imple-

mentation of various conservation measures. Additional research is also needed on the possible conservation benefits for the industrial and commercial sectors. Rising energy prices will continue to spur such transitions but it would be helpful to be able to plot cost-effective conservation scenarios for these respective entities.

Preparation of literature has also been a useful tool that the Federal Government has provided in the past. These materials have been well written and concise. Continuation of this function would be justified.

5. How should the Federal government evaluate and monitor the effects of its new energy policies and program changes?

   Possibly the best way to monitor the effects of any conservation program is to evaluate the consumption of the product in an unregulated market condition. As we have found out in the gasoline situation, price elasticity is indeed greater than what was thought. Rising prices serve to drive the economic equation in the direction of substitution or conservation. Given the proper information and data from the private sector and government, the individual will choose the proper mix of strategies to insure the protection of lifestyle as much as is possible.

6. What will be the effects if a state decides to phase out its energy office?

   The state energy office, while at times helpful to the private sector, has attempted to develop activities far removed from what is generally perceived as its mission. In several cases, there were attempts to develop load forecasting abilities, etc., which were going to be used to justify manipulation of consumption of those forms of energy that were perceived as of the "hard" nature while espousing the "soft" technologies. These attempts were not based upon any recognized cost-effective measurement but rather upon an idea of social direction for society in general. Rather than provide assistance to the private sector, adversarial relationships existed. This was not conducive to the common goal of providing the citizens of the nation with the tools necessary to formulate their own decisions about the type and quantity of any particular fuel to use. Advocacy of particular favored types of energy sources by these bodies only added to the bewilderment of the general public on the serious issue of providing adequate supplies of energy for our nation.

In summary then, we fully support the goals of the new energy direction of the Federal government and will continue our efforts to assist our customers in the conservation of energy. This best can be done, however, through the mechanism of the free market where the government's role is to establish rational public policies which take into consideration national security ineterests and environmental values but leaves the citizens and private sector with sufficient incentive to produce and conserve energy in a cost-effective manner which is consistent with the national interest.

Section 11
Federal Nonnuclear Energy Research and Development Act
Weatherization and Low Income Energy Assistance

The following statement responds to questions asked in the issue paper for use in preparing testimony.

1. Funding mechanisms and structural issues

   a. In light of the proposed changes, how can the nation maintain an effective low income weatherization program?

   o A key strategy for maintaining an effective low income weatherization program includes the structuring of a diverse funding based combining federal, state and possibly local government monies with private funds stimulated with tax incentives -- perhaps special tax incentives for energy-oriented companies.

   o The proposed change of typing weatherization in with the Community Development Block Grant funding could have serious detrimental effects. The effects would be felt because the Community Development Grant Program has been an ongoing program with existing projects and programs. This fund, by itself, is being cut 25%. People will want to save the ongoing programs and possibly build them with the added weatherization monies -- not sacrifice their program for weatherization. Different people have been involved.

   o In Montana, no state monies have been allocated for weatherization programs as they have in other states. Time is needed to allow the political process to survive cutbacks at all levels than accept new areas to allocate state monies.

   o There is an understanding of the importance of weatherization as a long-term solution among various sectors of the population. A Citizens Task Force comprised of former state government officials, fixed and low income representatives, a Community Action Agency representative and the president of the Montana Power Company researched the issue of the energy problems of fixed and low income people. They submitted a report emphasizing weatherization as a top priority.

   o But, to bring in the sectors to form a diverse base, an initial solid funding base is needed to secure support.

   b. If weatherization is transferred into the HUD Community Development Block Grant, what agencies would be effective sponsors at the community level?

- o In Montana, the number of agencies capable of administering the effective program is few. The Human Resource Development Councils (HRDC's) or the Community Action Agencies for Montana have been operating some type of weatherization program since 1975. Longevity in development and administration of social programs such as weatherization is a strong element for effectiveness. The HRDC's are private nonprofit corporations that would be the best agencies for establishing a contract arrangement for administering the program in Montana. Other agencies, such as local county governments are not experienced in this effort in Montana. They are experienced in eligibility certification such as AFDC, but they do not administer service programs. They mostly purchase services through private nonprofits. Many wasted dollars would be spent in unnecessary start-up time. Private contractors specializing in the insulation business have special interests in mind and would not promise the type of coordination and objectivity needed to administer the program. Being a private nonprofit corporation, the HRDC's can hire various types of labor based on funding levels and requirements. They could design a cost-effective labor mix of volunteers, union or CETA's based on what is available. Community Development Block Grant procedures allow for contracting with community agencies to do the weatherization work. Administrative costs are minimized.

- o Without Community Action Agencies in Montana, the program might die or fade away.

c. How can problems involved in transferring the program from one agency to another be minimized?

- o If the programs have to be transferred (which is not advisable), impacts are minimized by:

  Hiring some of the higher qualified employees of the previous agencies who have experience with the program.

  Allowing an adequate time for transition from one program to the other. Allow time for employees to spend time together. Most problems occur when a desk is emptied one day and filled the next. Time is needed to educate the public. Clients are frequently lost in changeovers.

2. Implementation Issues

a. If a state decides to phase out Community Action Agencies, how can their resources and experience be transferred to the new weatherizition sponsor?

- o Again, some of the best employees could be hired by the new agency. They are the ones with the experience.

At least, the Community Action Agency employees should provide training or be contracted as a transitional team.

- o The CETA trained labor could be hired by the new weatherization sponsor. The purpose of the CETA training is to provide the base for advancement into other jobs.

b. Should LIEAP funds be utilized for weatherization? How can the LIEAP program coordinate its activities with the weatherization program at the state and/or local level?

- o LIEAP funds should be allowed for weatherization. States should be able to authorize up to 30% of LIEAP funds for weatherization. Again, a large starting base is needed. Weatherization is the long-term solution. Larger amounts are needed for its implementation -- not smaller.

c. What is the most equitable and cost-effective weatherization program? Should the Federal government continue to provide substantial assistance ($1,000-$2,000 per unit) to a relative small number of houses? Or, should the program be restructured to provide minimal weatherization ($200-$300) to a larger number of units?

- o To equitably service low income people, programs need to be designed for both low income homeowners and renters. In Montana, approximately 50% of the low income families are renters.

- o To design the most cost-effective weatherization program, more money per unit is necessary, not less. Current limits have only allowed a band-aid approach toward efficient retrofitting. Current rules have allowed $500 for materials and $500 for labor. Since many low income people live in older housing, $500 has covered a superficial amount of storm windows, caulking and perhaps insulation when the roof leaks and the furnace is operating at 30% efficiency. The Citizens Task Force on Energy problems of Fixed and Low Income Consumers, an independent group brought together by Montana Power Company, states in their final report:

> "Conservation offers the most readily available long-term solution to the energy problems of fixed and low income people. At the present time, energy assistance funding to provide weatherization for fixed and low income housing is limited to $1,000 per unit, with only $500 of that amount allowed for weatherization materials.
>
> In order to expand weatherization to address sufficiently the problem of housing inadequate to conserve energy, the Citizens Task Force recommends that the Legislature appropriate Coal Tax or other funds available to supplement weatherization and energy conservation programs for fixed and low income dwellings, to be invested in retroffitting residences with adequate and/or other energy conserving improvements..."

More funds to support weatherization are needed, not less.

d. How can CETA workers be retained in the weatherization industry?

- o Tax incentives tied with a strong information campaign selling the skills of the CETA workers may be the key way of integrating trained CETA workers in the private sector. The potential is not bright given the large amount of unemployed union labor currently available in the economy. Union labor, however, raises the costs of the program to unnecessary heights.

- o The most effective way may be to form other private nonprofit organizations built with trained CETA labor and available to do contract work with the local agency administering the program.

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CHRIS PALMER
Director of Energy and Environment
National Audubon Society
645 Pennsylvania Avenue, SE
Washington, D.C. 20003

I very much regret that I am unable to testify at your Section 11 hearings because of previous commitments but I would be very grateful if you could enter into the record the Audubon Energy Plan, a copy of which is attached. This study reflects our views on what the nation's energy policy should look like. As you can see we support a major emphasis on energy efficiency.

(Following is an extract of the Audubon Energy Plan, which was reviewed in its entirety but is not included in the Transcript due to its length).

Energy is a major factor in determining the quality of our lives. It furthers the production of goods and services, and its production and use seriously impact on the quality of our environment.

The Audubon Energy Plan is a practical plan for our country to obtain adequate energy while protecting the environment. It is based on the conviction that by using energy more efficiently our economy can continue to grow and prosper, providing an increased level of goods and services for all at least until the year 2000 without consuming any more energy than is being used today. The Audubon Plan envisions a steady increase in the use of solar energy (25 percent by the year 2000) which will cause a steady decrease in environmental pressures from traditional energy sources. The Plan is a low-cost energy strategy and provides the most rapid route to national energy security.

Audubon's Role in the Energy Debate

Audubon's concern is with life — plant, animal, and human — and the air, water, and land so essential to life. This broad interest which has evolved over the past eighty years began with the successful fight by a group of highly motivated activists to stop the slaughter of plumed birds. Continued activity in the conservation of wildlife resulted in an awareness of the inter-connetedness of life -- ecology -- and led Audubon men and women to become environmentalists dedicated to protecting the life-support systems of our planet.

The production and use of energy have a major impact on our environment. Pollution of the air stems primarily from the burning of fossil fuels in our factories and powerplants, automobiles, and homes. It is the major cause of the acid rain which falls throughout much of the world, destroying fish life and plant life and corroding buildings. Oil spills contaminate beaches everywhere. Hydroelectric projects flood valuable wildlife habitat. The accumulation of radioactive waste threatens life for millenia. (Because of Audubon's special concern with wildlife and the habitat on which it depends, a detailed catalog of the impact of energy facilities on wildlife and wildlife habitat has been prepared and will soon be released.)

On the other hand, the production and use of energy are essential to a modern style of life. Audubon is convinced that we can have enough energy to continue the growth of production of goods and services while at the same time protecting the environment.

One reason will be a marked increase in the efficiency with which we use energy; in other words, an increase in the productivity of energy. Because the Audubon Plan requires much less coal, oil, and nuclear power than are envisioned in the plans of the energy industries and the federal government, it will dramatically curtail environmental environmental damage from strip-mining, air pollution, acid rain, and the production of nuclear wastes. Sulfur oxide air pollution and rain acidity will actually drop well below current levels. The Audubon Plan will also ensure that environmental safety is built into the new energy-conservation and renewable energy technologies at early stages rather than added to them half-heartedly decades later.

Audubon's Expertise in Energy Matters

Traditionally, Audubon's expertise has been concentrated in the biological and ecological sciences. Awareness of the serious ecological impact of energy activities has led the Society to expand its staff to include scientists with backgrounds in chemistry, physics, and the agricultural sciences.

A new environmental policy research department has been formed to carry out policy studies in a number of areas of interest to the Society, including energy.

Preparing an Energy Plan as detailed and specific as this one requires that difficult choices be made -- about nuclear power, the use of coal, and the use of land for bioenergy, and so on. These choices have been made by Audubon staff members, using inputs from many comprehensive studies prepared by a variety of prestigious private and governmental institutions throughout the world. Additionally, a draft of the report was examined by outside reviewers. In this regard, we are particularly indebted to Alvin Alm (Harvard University), Paul Bente (Bioenergy Council), Lester R. Brown (Worldwatch Institute), William U. Chandler (Environmental Policy Institute), Frank von Hippel (Princeton University), Roger Sant (Carnegie-Mellon University), Gordon Thompson (Union of Concerned Scientists), Robert Williams (Princeton University), and Daniel Yergin (Harvard University). Most of the criticisms and suggestions made by these reviewers have been incorporated in the Plan. The major quantitative changes that have been made include: 1) an increase in the projection for natural gas availability in the year 2000 (from 11.5 quads per year to 15 quads per year); 2) a decrease in the projection for industrial use of solar collectors (from 3 quads per year to 1.7 quads per year); and 3) an incerease in the capital investments in energy efficiency from $500 billion to $700 billion).

The Audubon Plan is not to be considered a fixed strategy. Details will be revised periodically to take into account new developments — in both technology and governmental policy -- that arise.

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PATRICIA B. PELKOFER
Vice-President
Group Against Smog and Pollution
P. O. Box 5165
Pittsburgh, Pennsylvania 15206

Members of GASP's Energy Committee have reviewed the 17 page issue paper concerning the 1981 Section 11 public hearings under the Federal Non-nuclear Energy Research and Development Act.

We have decided that we do not have access to the necessary records and information to adequately comment on the issues and questions presented in this document. We sincerely hope that directors of local and state programs for energy conservation, and those citizen's organizations that have better access to these efforts, have submitted factual and documented testimony to assist in your evaluation.

Our comments, for instance, on how efficient or successful the weatherization program has been on the local or state levels, or on what might happen to this important effort when federal funding is eliminated, would be no more than opinion and guessing on our part without a great deal of information we do not have.

However, we "guess": that many energy conservation efforts on the state and local levels will be discontinued without federal funding and guidance, as priorities for local and state tax dollars are set.

We have special concern for the poorest and the elderly among us who can neither afford to make their homes more energy efficient, nor the funds to pay the higher cost of fuel wated in inefficient or non-weatherized dwellings. Many of these persons may live in rented homes where theirs is not the decision or option to weatherize ... and should the landlord decide to make such improvements, the rental fee, as well, may become burdensome to the poorer tenant.

As an incentive for energy conservation, GASP's policy supports decontrol of oil and natural gas pricing, so that energy used reflects actual replacement cost. However, we believe this measure must be accompanied by provision for those with low income through a minimum energy "life line" basic rate or some such program as "energy stamps". The practice of paying heating bills for the disadvantaged, which may be dollars for precious energy resources escaping through walls and windows rather than providing heat for the elderly or poor person, is not acceptable nor in the interest of energy conservation.

Finally, we call your attention to a recent study conducted by the State of Pennsylvania, Office of Planning and Development, entitled "Choices for Pennsylvanians". Nearly three dozen public meetings were held throughout the state in an effort to identify the economic, social, health, etc., priorities of Commonwealth elected officials and citizens. Several threads became a pattern emerging at these sessions: -

1) Pennsylvania citizens desire a balanced growth approach to economic development, with about as much concern for their communities and for the environment as for business expansion. Little willingness exists to lower pollution standards as a way to keep or attract industry, and economic growth without regard to its impact on communities and resources was strongly opposed.

2) Other options ranking in the top ten concerns were conserving energy in industry, conserving energy in homes and development of alternative energy sources. Conservation of energy in industry and homes were listed as more important by most citizens than efforts to develop new energy sources.

Enclosed for the record is an article from the Sunday Patriot-News, Harrisburg, PA., July 19, 1981 by Bruce Cutler summarizes the study. We hope you can obtain a copy of the report in its entirety for your evaluation and consideration.

The right kind of approach, with a careful plan and good public education on the part of our state and local elected officials (and the employees who carry it out) could translate the type of public thinking expressed in this report into positive and funded programs for energy conservation on the state and local levels as federal dollars continue to evaporate.

Thank you for the opportunity to comment.

GERALD ROCCAPRIORE, President
Solar Power Institute
P. O. Box 450
46 Meriden Avenue
Meriden, Connecticut 06450

The United States is putting its domestic economy and future existence on the line to bring oil into this country. The Reagan Administration is spending $160 billion on defense to protect the flow of crude oil from the Middle East. The Middle East brings in 21 million barrels of oil a day and uses only 2 million barrels of oil daily. Eight million of this foreign oil is shipped into the United States daily. The United States and other non-Communist countries produce 31 million barrels of oil daily and consume 51 million barrels of oil a day. The United States instead should put its energy house in order and stop being at the mercy of non-renewable sources of energy, such as the Mid-Eastern oil cartel.

The effect of such dependence not only hurts the international stability of the world, but also jeopardizes the American economy which sends so many dollars outside the country to pay for its addiction to foreign non-renewable energy supplies.

The Reagan Administration need only look upward -- at the sun -- to find the answer to its economic and defense woes. The sun, which is man's oldest companion, can be its best teacher now in leading the way out of this economic and political shambles.

The sun provides the source of energy that can, for free, bring more energy than all the tea in China -- or all the oil in the Mid-East, all the coal in Pennsylvania, and all the uranium in Africa.

Instead of making enemies with the Mid-East and the world over non-renewable energy supplies, let us make friends with nature and its gifts. Let's harness the power of the natural rays of the sun to heat homes and bring international peace to this troubled world.

The Solar Power Institute of Meriden, Connecticut is dedicated to realizing the dream of natural energy that can be found by looking up in the morning -- instead of spending billions of dollars digging downwards for crude oil or coal. Let's channel man's energies that have brought us the elimination of many of mankind's ills and the creation of so many wonders, and use it to radiate warmth to a troubled world by using the sun.

While we're looking up, let's look at the atmosphere which is so adversely affected by man's use of non-renewable forms of energy that have made some men rich but our American people so poor from inflation. Government surveys project a drastic increase in carbon dioxide, nitrogen oxides and ash and sludge because of coal burning and oil use. Also, we still face incredible dangers from problems with radiation if we look to more nuclear plants as our answer.

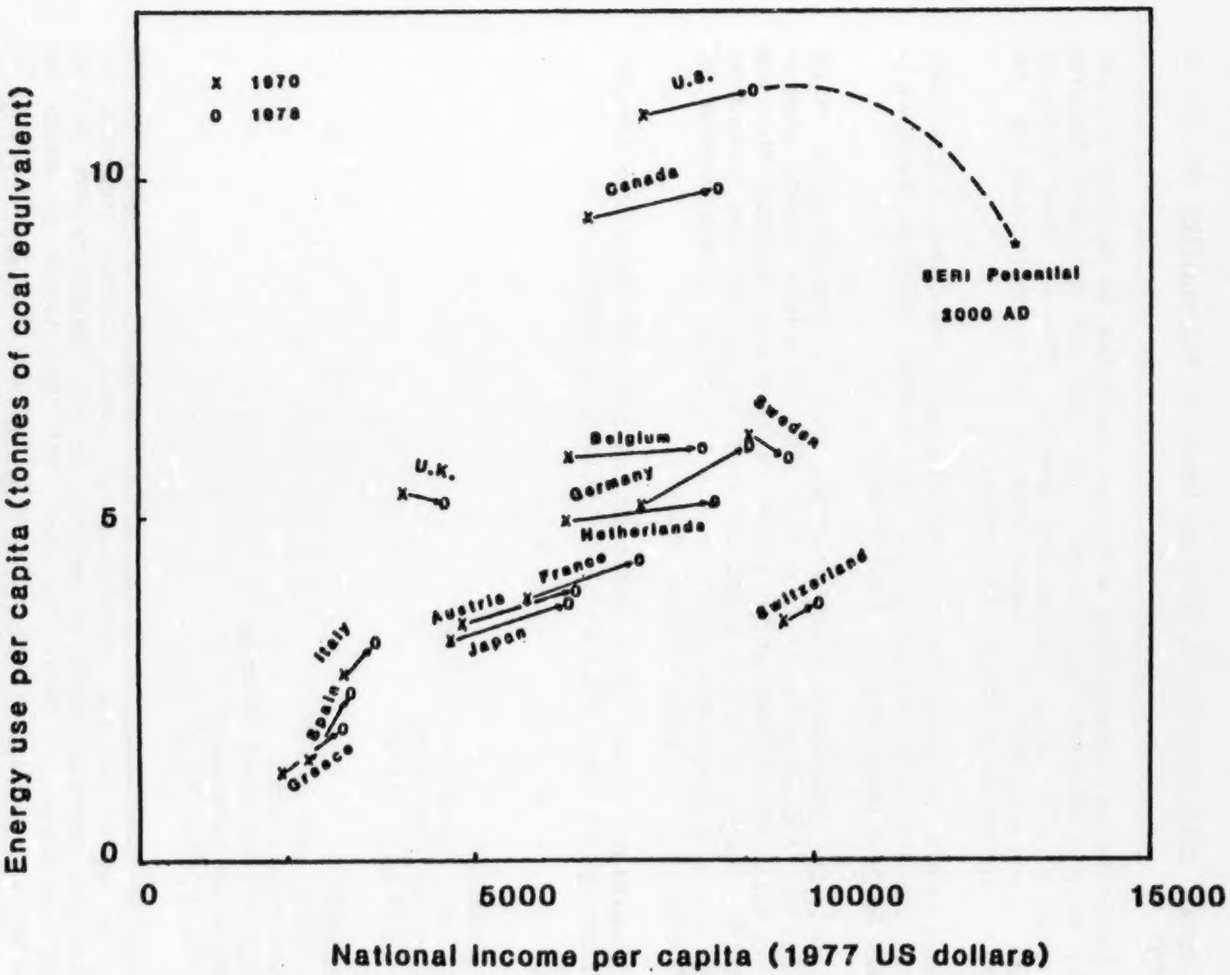

Figure 1 Annual per capita energy consumption and gross national product, 1970 and 1978, as compared with the potential for 2000 A.D. energy and GNP for the U.S. from the Sawhill study. Source: Tables 1583 and 1594, U.S. Bureau of the Census, Statistical Abstract of the United States: 1980 (101st edition), Washington, D.C., 1980.

Now, the United States Department of Environmental Protection is considering ways and means to monitor and evaluate the effects of changes in energy policy.

That agency must consider a special study on the quality of air in this country.

This Institute is recommending a strong commission to monitor the air quality and solar radiation that is being defused and deflected because of the effects of oil, coal, and nuclear powers. The air that gives us and sustains life shouldn't be jeopardized by being suffocated by our dependence on non-renewable sources of energy.

Already, Canada is complaining about the acid rain that falls over our borders into its land, affecting its food growth. Must we wait until more of this happens and hurts our food growth.

Gentlemen, the Institute heartily urges such a commission to study our air quality. And we strongly urge that this be a blue ribbon commission with no taint of interest in this same oil and coal industry that has already almost brought us to our knees internationally over its greediness for foreign oil and insatiable appetite for big bucks at the expense of domestic tranquility and international peace.

This commission should be a group of concern and honorable persons that can honestly and truly tell us of our future air supply.

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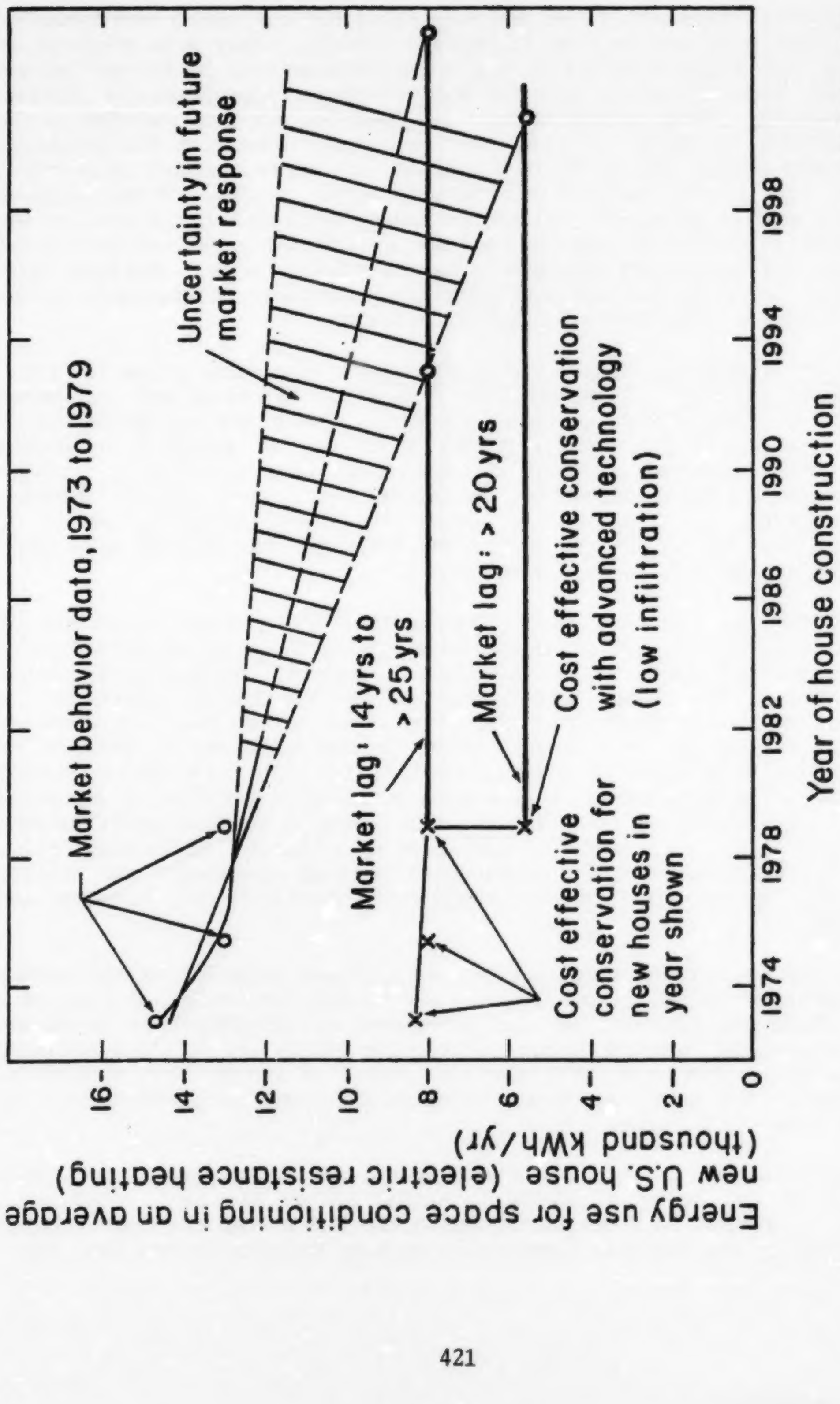
ARTHUR H. ROSENFELD
Energy Efficient Buildings Program
Lawrence Berkeley Laboratory
Berkeley, California 94720

JEFFREY P. HARRIS
Buildings Energy Data Analysis
and Demonstrations Group
Energy Efficient Buildings Program
Lawrence Berkeley Laboratory
Berkeley, California 94720

Although we were unable to attend EPA's Section 11 hearings in person this year, we appreciate the opportunity to submit written comments reflecting our own personal views on several of the issues raised in your pre-hearing announcement. These include: (1) the degree to which the private market can be expected to move toward greater energy efficiency in response to rising energy prices; (2) additional steps needed at the Federal level to speed the market's response and help assure its full (and equitable) coverage; and (3) an important role for the Federal government in monitoring the effects of both market behavior and public policies on the rate of progress toward more efficient energy use.



XBL 813-507

Figure 2 Market behavior and energy conservation in electric resistance heated new houses in the U.S.*

* Based on LBL analysis of NAHB data on 300,000 houses constructed 1976-1979

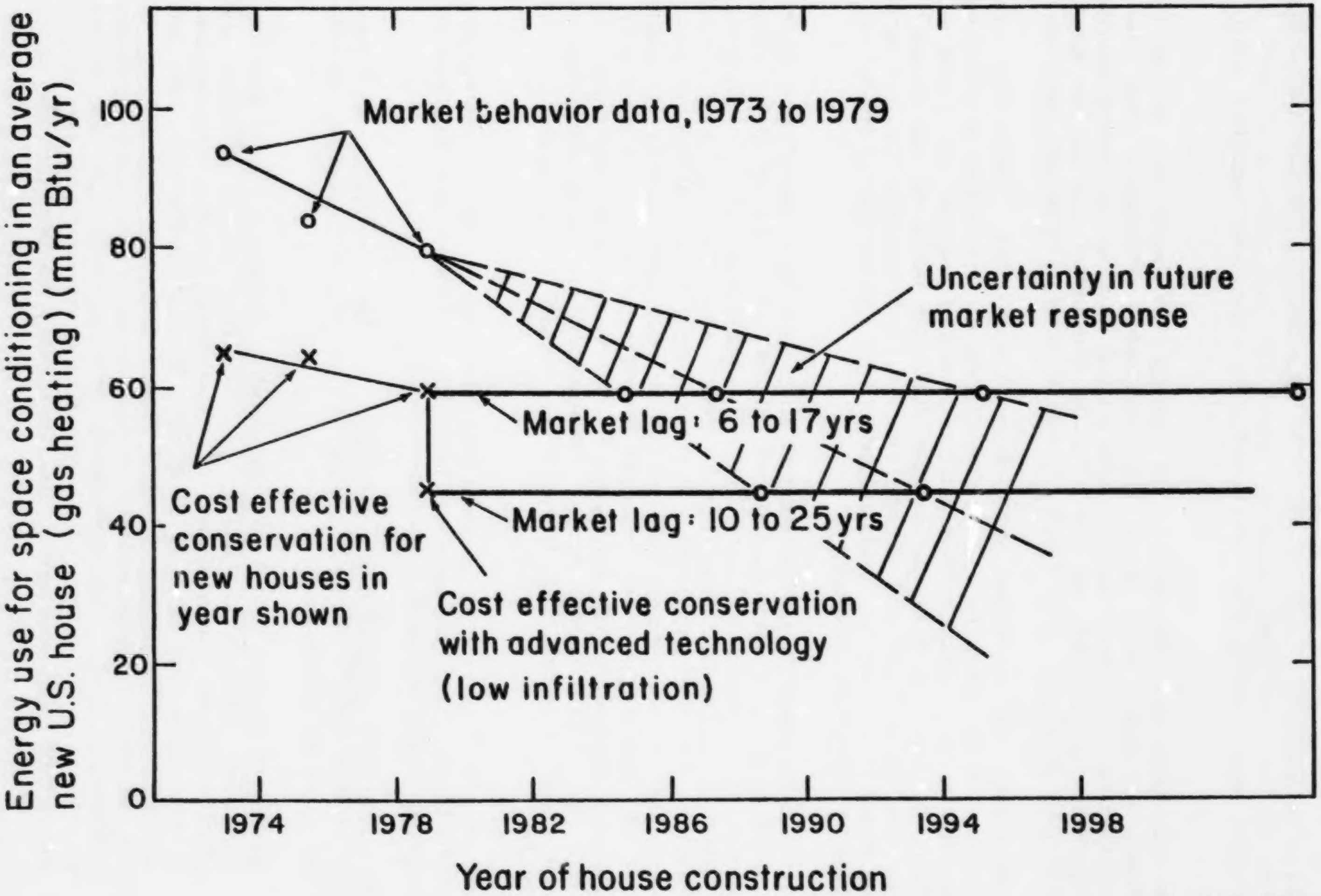
Along with this letter, we are submitting for the record two documents for inclusion with the Section 11 hearing records. They were prepared as testimony for recent hearings by the House Subcommittee on Energy Conservation and Power (5/20/81) and the House Interior Appropriations Subcommittee (4/8/81) (These documents were reviewed but are not included in the Transcript due to their length). The two papers summarize the potential for improved energy efficiency in buildings, and offer examples of barriers and time lags in the market's response to higher prices. These examples draw upon several years of research on energy efficient buildings, at LBL and elsewhere, and illustrate the need for a continued but selective Federal role that complements and strengthens market forces. A few additional comments will introduce the enclosed documents, and their relationship to the issues raised in this year's Section 11 hearings.

Market response to higher energy prices. Historically low energy prices have left the U.S. market with a stock of buildings and appliances which are far less efficient than is optimal at current energy prices — let alone at the higher energy prices which can be expected in coming years. Other advanced industrial countries, with historically higher energy costs and heavy dependence on imported oil, have already adjusted their economics, in part, to new energy realities, achieving levels of energy use per capita (or per dollar of GNP) that are considerably lower than those in the U.S. (See Figure 1.)

Evidence that we have seen suggests that the current directions of Federal energy policy will cause the market's lag in achieving economically optimal levels of efficiency to increase, at least in the near term, rather than decrease. In simple terms, this is because energy economics are continuing to change faster than the normal rate of turnover in the building stock — even if one assumes very optimistic rates of adoption of energy-saving techniques in new buildings. The major hope for reversing this trend in market lag is to make even more rapid progress in improving the energy efficiency of the existing stock, through physical modifications ("retrofits") and more careful operating practices. Efficiency gains in new buildings can also be accelerated, through government and utility actions to improve the flow of technical information to industry and consumers.

For new residential construction, one approach to measuring the market lag is underway at LBL; some preliminary results are shown in Figures 2 and 3. These two figures, one for gas-heated and the other for electric-heated residences, compare space conditioning energy use in homes actually built in 1973, 1976, and 1979 with the amount of energy that would have been used if the same new homes had been designed more efficiently to minimize life-cycle energy costs.

The difference between the actual homes and the economically optimum design is on the order of 30-40% in annual energy savings. Consumption of actual new homes was calculated using the DOE-2 computer model, based on a survey by the National Association of Home Builders of new home char-



XBL 813-506

Figure 3 Market behavior and energy conservation in gas heated new houses in the U.S.*

* Based on LBL analysis of NAHB survey data on 300,000 houses constructed 1978-1979

acteristics in each of those years. The characteristics and estimated energy use of the "life-cycle-minimum" house for each year were based on LBL research, again using the DOE-2 model to calculate expected energy use.

The data show that the market, on average, is improving, but so is the economic optimum. Even under the improbable assumption that real energy costs remain at their current levels, and that no new energy-saving technologies are introduced, we now estimate the market lag in new homes at roughly 6 to 25 years. (The range depends on housing type and location.)

These market lag estimates apply only to new homes; comparable efforts are needed to identify and assess trends in retrofitting existing homes for energy efficiency. This analysis should include the rates of retrofitting for various measures and for different parts of the country, the actual energy savings and costs involved, and analysis of how much these decisions have probably been influenced by rising energy prices vs. information or incentive programs.

Initial data compiled by LBL suggest that some home retrofit programs are achieving measured energy savings of 20-25%, at costs of under $2000 per household (or roughly $19/barrel-of-oil equivalent saved). However, this is based on a limited sample, and results show quite a range around the average: a few very successful retrofits have saved 40-50% or more, while energy use in other homes was reduced by only about 10-15% (although in some of the latter cases the retrofit investments were also very low). These data are presented and discussed in the recent SERI/LBL report on "Building A Sustainable Energy Future", printed by the House Committee on Energy and Commerce (Committee Print 97-K, April, 1981; Table 2.1 and Figure 2.12).

These preliminary results demonstrate the importance of continuing serious efforts to track and analyze both the successes and failures of conservation programs and market forces.

Federal actions to reinforce the market. As the enclosed papers suggest, some of the most important federal roles in complementing market-induced energy conservation are:

- Continued support for basic research in building energy science, including research on indoor air quality, health effects, and other indirect consequences of some energy-saving strategies. Private firms may benefit from much of this basic research, but are unlikely to support it at a significant level, since many of the results can be considered "public goods" (i.e., they represent information that, once developed, is relatively easy for others to obtain). Since no one organization can capture the entire benefit of such research, none is likely to pay for the work.

- Information, feedback, and quality control. A critically import-accurate, timely, understandable information to both producers and consumers. The Federal government can assist in providing reliable analytical tools for measuring and communicating the energy performance of individual products or technologies and of whole buildings. One approach to "labelling" buildings for their energy performance is outlined in the enclosed papers. These analytical tools and energy labels must be in turn be based on an ongoing research program, one that includes a full range of performance modelling, laboratory measurements, and field monitoring of real buildings.

- Participation in high-risk/high-leverage demonstrations. In any industry, there are only a few genuine innovators, but a larger number of firms willing to follow another company's lead, especially where the innovative project is made visible and accessible. Government participation in innovative technology demonstrations is all the more important in many sub-sectors related to buildings, where markets may be characterized by a limited number of well-established suppliers or purchasers, where (conversely) the firms are small and poorly capitalized, or where there are other sources of institutional inertia or constraints. The case study of the introduction of high-frequency electronic fluorescent ballasts (4/8/81 testimony) offers an instructive example.

- Market failures from misplaced incentives. This final category calling for a government role involves instances where normal market incentives do not operate, or operate only within narrow limits. One clear example is the lack of incentives for either building owners or tenants in rental housing (or leased commercial space) to invest in energy efficiency. Another example of an obvious source of market failure is that wherever energy prices to consumers are significantly lower than actual replacement costs for energy supply (as is almost universally the case), private decisions on energy use will be based on inappropriate market signals.

  The solutions in cases such as these are not yet clear. Nor is it obvious that the Federal government represents the most appropriate -- or the only appropriate -- level for public sector involvement. But in the case of both rented/leased buildings and energy pricing policies,the Federal government can still provide an important source of general financial and technical support to innovative new approaches developed by others, at the local government level, in community and non-profit organizations, and by industry itself.

Monitoring progress in conservation. We have already suggested the need for a much more attentive monitoring of trends in energy conservation and efficiency in buildings (and in other sectors). Looking at aggregate trends in energy use is important, but not sufficient. Also of interest are:

- the range of conservation results achieved (including variations in energy saved and in the costs of conservation);

- identifying reasons for this range (what factors seem to separate successes from failures?); and

- trying to untangle the impact of market forces (energy prices) from that of specific conservation programs, regulations, and policies.

Gaining this more detailed level of insight into what is happening with energy conservation, and why, will not be a simple or short-term process. Nor is is one that the Federal government should expect to pursue alone. But once again, DOE and other Federal agencies can help to set directions and serve as an example to other levels of government, utilities, and private industry by pursuing two types of activities:

- Establish a framework for technical guidance and support for the conservation data collection and analysis done by others. This would include periodic nationwide or regional statistical surveys of the energy-using stock (as the Energy Information Agency has begun doing), compilation and comparative analysis of energy conservation data from a variety of sources, and the dissemination of guidelines to help standardize and improve the technical quality of these diverse data-collection activities.

- Maintaining, for the Federal government's own conservation programs and tax incentives, the highest professional standards in monitoring and evaluating results, and use of the findings to improve or terminate programs.

In conclusion, we would emphasize that the Federal roles we are recommending do represent a change in past emphases (although much of the time Federal energy conservation policies in the past have been characterized more by confusion than by adherence to any clear set of goals or strategies). The direction of this change is clearly toward a greater reliance — but not a blind dependence — on the market.

The challenge for Federal policy-makers and managers will be threefold. First, to gain accurate insights into where market forces are and are not leading toward economically preferred outcomes. Second, to understand why this happens, and to devise and diligently pursue intervention strategies that are no more (and no less) intrusive than needed. The final challenge is to be as ready to address inequities in the market's solutions as to deal with its inefficiencies.

Thank you for the opportunity to present these views.

MR. RICHARD O. SILVA
Energy Detectives, Inc.
Executive Offices
549 Gulfview Drive
Gulfstream, Florida 33444

In January of 1980, Dr. Gautam Dutt of the Center for Environmental Studies of Princeton University reported to Congress that 1.6 million barrels of oil per day could be saved if every residential property in the United States was audited for energy efficiency and retrofitted.

Intrigued by this and other information, I set out in August of 1980 on a four month tour of the country, from Philadelphia to Los Angeles and then to Florida. I visited countless cities and towns, evaluated over one hundred private homes, met with numerous electric company officials and principals of energy saving enterprises. The results of this trip revealed to me that very little was being done to implement residential energy savings throughout the country. It also became apparent that water conservation was just as important as energy conservation.

In November, 1980, I formed a company in Philadelphia, Pennsylvania under the name of Energy Detectives, Inc., employing eight persons, two of which were trained by Princeton University in proper residential auditing procedures. During the first three months of operation, Energy Detectives preformed only audits, however, many homeowners desired that it perform the retrofit work as well. Numerous homes were also re-audited at the homeowner's request after other firms had performed the retrofit work. We found much of the work of the retrofitters to be shoddy and not to specifications. Today, Energy Detectives is a full service, energy conservation enterprise.

Energy Detectives has performed 1037 audits of which 86% have been retrofitted by us. 94% of the audits performed were to homes owned by upper income, professional persons, even though advertising expenditures, which exceeded $30,000.00, were directed to a middle-class audience. Based on these results, it is apparent that middle-class homeowners are not taking advantage of the service offered.

A recent survey of fifty homes previously audited and retrofitted by Energy Detectives revealed an average of 27% energy savings and a feeling by the respondents that they were conserving water due to hotter water reaching the faucet faster, low flow shower heads and baffles in water closets. A number of middle-class homeowners were also surveyed. The reason for not having an audit performed were:

1. They did not believe that they could save energy without being uncomfortable.

2. They were not aware of the need to conserve water except during drought conditions.

3. They believed a tax deduction of $300.00 for energy conservation was not enough. (Most were not even aware of such a tax deduction and when made aware, did not think it was sufficient in any event.)

4. They believed solar energy is not perfected and will not be cost competitive in the foreseeable future.

The Residential Conservation Service Program has been in effect for two years. Some utilities have offered this service for three years. While I am not aware of all of the details, Princeton University, Philadelphia Electric Company and Philadelphia Gas Works have admitted that Energy Detectives has performed more audits than any privately owned firm or utility.

I have been told that certain utilities have performed thousands of so-called audits which are, in fact, not audits at all. What they have done is to have a meter reader measure and record the outside dimensions of the building, the number of windows and the number of stories. This information is then set into a computer and the consumer is advised of the R factor of insulation needed to make his or her home energy efficient. This system is not only misleading but it cannot be considered to be an audit when compared to the Princeton system.

Further, the homeowners following of mere insulation recommendations neither makes his or her home energy efficient nor advances the cause of energy conservation with this cursory audit method. It is also my opinion based on numerous discussions with homeowners and the public in general that there exists a total lack of confidence in the gas and electric utilities. To the contrary, the American public believes that these companies are monopolies that care little about their customers and are only interested in rate increases and surcharges. It is difficult for the public to swallow that a company which makes its profits on the sale of energy is seriously interested in energy conservation. It appears to me then that energy conservation has become a mass of inefficiency; of large utilities seeking computerized answers with minimal data input and the continuing waste of millions of dollars spent creating complexities out of simple on-site problems. Only when one stops and considers the thousands of different home builders and commercial and construction firms who have built the homes, office buildings and commercial structures in this country, each using a different construction technique, materials, specifications, and taking short cuts, does one realize the absolute necessity for an in-depth audit of the type developed by Princeton University and used exclusively by Energy Detectives.

What is needed to motivate the American people including low income persons and businessmen to act to conserve energy and water?

First, it must be recognized that the public-at-large will not incur increased debt for what it considers to be a savings of a few dollars per month. It must also be recognized that most people believe energy conservation means being uncomfortable. Therefore, I propose the following:

1. Provide tax credits (not deductions) for the full amount spent by the property owner in the year the audit and retrofit are completed. The property deed should then be noted accordingly so that future owners and local or state governments are aware of the building's energy efficiency.

2. There should be provided three or five year low interest loans from state government funded by the Federal government, if necessary, to pay for the cost of the retrofit. Checks should be made payable to the property owner and to the retrofit company. A Certificate of Compliance and Completion should be signed by the property owner and the retrofit company and these loans should be made quickly and without red tape, in other words, as short as three days.

3. Any person or business entity selling a retrofitted property and purchasing another property which has not been audited and retrofitted should have the opportunity to qualify for another low interest loan which should bring the newly acquired property up to energy efficient standards.

4. Within five years from a predetermined date, any property not retrofitted, with certain exceptions, should not be sold until retrofitted, thereby insuring that energy inefficiency is not passed over or passed on.

5. At such time as is determined there exists or will exist a free enterprise system of independent enterprises in the energy conservation business, a massive advertising campaign sponsored and funded by the Federal government should be aired on the television and radio. This campaign should be regionalized as to its content but the objective should be the same, to substantially increase public awareness of what is available and what Government will do to assist property owners in saving energy.

Needless to say, there will be both unscrupulous property owners and retrofit companies who will attempt to take advantage of this program, however, I am sure that retrofit guidelines and material specifications suitably enforced can be implemented and monitored through state or local inspection and by random analysis together with appropriate penalties for fraud or misrepresentation.

A recent study by the Department of Energy's Oak Ridge National Laboratory concluded:

> "Energy conservation saves energy and money, reduces the amount of pollution, reduces oil imports and our dependence on foreign sources and buys time during which to develop alternative sources of energy that are environmentally benign, abundant and socially acceptable."

It is now time for the rhetoric to cease and the assault on the misuse of energy and water to begin.

For my part, Energy Detectives will begin franchising energy and water conservation audit companies nationwide by January of 1982. These small, efficient, privately owned and operated businesses will create jobs and opportunities for thousands who will, by their efforts, help to audit hundreds of thousands of homes and businesses in a relatively short time. The practical and actual result of these audits and resultant retrofits will be to reduce our dependence on foreign oil.

Our Government has given or proposes to give hundreds of millions of dollars to assist utility companies in making a half-hearted and ineffective bid at inducing their customers to conserve energy. Obviously, the conflict of interest suspected by the general public as well as the lack of technical excellence of these programs has netted or will net few, if any, positive results.

The current administration has re-emphasized the need for private enterprise and the American consumer to do for themselves what Government has attempted to do unsuccessfully heretofore. My proposal allows everyone to enjoy the long-term benefits of home energy and water conservation without a giveaway to any special interest group - no matter how large or influential - while promoting jobs in the private sector. The money already doled out to the utilities for ineffective programs could have made a major contribution to the lower interest rates on loans I have proposed.

In conclusion, therefore, let me re-emphasize the tremendous need for intelligently managed and scientifically performed energy and water conservation audits in this country. The benefits to be achieved by private industries working to provide jobs and creating real savings for Americans all accomplished not by handouts or giveaways but by sensible and logical credits and low interest loans so that we, as in the American tradition, can do it ourselves.

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PETER M. STERN
Vice President
Corporate and Environmental Planning
Northeast Utilities
107 Selden Street
Berlin, Connecticut

(This statement and the additional information submitted with it, was excerpted from testimony presented by Mr. Stern in June 1981, before the State of Connecticut, Department of Public Utility Control, Docket No. 810602 - Application of the Connecticut Light and Power Company, and Docket No. 810604 - Application of the Hartford Electric Light Company.)

INTRODUCTION

My name is Peter M. Stern. My business address is 107 Selden Street, Berlin, Connecticut. I am Vice President, Corporate and Environmental Planning of Northeast Utilities. Among my responsibilities are the load forecast, rate research and consumer research functions. In January 1981, I was given the additional responsibility of insuring that the Northeast Utilities Conservation Program for the 1980s and 1990s (NU 80s/90s) is carried out in keeping with its objectives.

OVERVIEW

NU 80s/90s is a comprehensive plan for improvement in the economics of supplying electric power to customers of Northeast Utilities (NU). It shows how within six years the percent reliance on oil for 47 percent of energy used for electric generation for NU customers can be reduced to 10 percent by:

- completion of Millstone Unit 3 and retention of substantial ownership
- conversion of 850 MW of presently oil-fired generating capacity to coal
- limiting growth in electricity ocnsumption to 1.5 percent or less annually (in contrast to the 2.8 percent average annual growth experienced from 1975 to 1980)
- addition of hydro and refuse-derived energy.

The successful completion of this first six year stage of the NU 80s/90s program will benefit customers by minimizing the inflationary effect of rising oil prices and by greatly improving security of supply. From the measures taken between 1981 and 1986 alone (completion of Millstone Unit 3, coal conversion, and the addition of other non-oil capacity) customers will save some $6.3 billion (nominal dollars in the years the savings occur) between 1981 and 1993 compared to what they would have paid should reliance on oil for generation continue as at the present. This amounts to about a $1,600 savings for the customer with a 500 kWh monthly bill, and hundreds of thousands of dollars for our larger commercial and industrial customers.

With the completion of Millstone Unit 3 in 1986, there will be no need for additional base load capacity on the NU system until near the end of the century, greatly reducing capital requirements for the construction program. There will thus be adequate time to assess and test emerging electric generation technologies before making a commitment. This flexibility in planning for electric power generation and the reduction in the capital construction program will be important and valuable outcomes of the completion of the 1981-1986 phase of NU 80s/90s.

A more secure and less inflation-prone electric energy supply such as we have planned in NU 80s/90s will also make a vital contribution to the economic health of the region and state in the 1980s and 1990s by assuring businesses of a reliable and economic supply of electric power, one that can also accommodate a surge of demand as could occur if there were a major disruption of the world oil supply or price system. NU 80s/90s is an action plan in consonance with the emphasis in the Connecticut Energy Advisory Board's (CEAB) 1981 report on diversity of fuels in the Connecticut economy, conservation of energy, and the availability of energy for economic development.

The oil displacement as part of NU 80s/90s is substantial and has regional significance. In 1987 alone coal conversion and the addition of Millstone Unit 3 (with a 65 percent NU share) will replace 14.5 million barrels of oil (8.5 million barrels from coal conversion and 6.0 million barrels from Millstone Unit 3). Electric power from currently operating nuclear plants in 1987 will displace 21.3 million barrels of oil. To place this in perspective, the total oil replacement of 35.8 million barrels in 1987 is nearly one-half the 78 million barrels of residual oil used for electric power in New England in 1980. In addition, oil use in the region will be reduced at the point of use because of conservation measures taken by customers.

The economic benefits from NU 80s/90s are extensive. Let me summarize them in general terms:

- o Direct benefits to families and businesses equal to the value of the energy saved through conservation.
- o Benefits to the state's economy in the form of:
    - reduced oil dependency
    - retention of more dollars in the state's economy because energy conservation expenditures involve spending within the state. This will represent increased state income over the alternative of not installing conservation measures and continuing to buy oil from out-of-state producers. The savings in energy expenditure effectively increase income and spending within the state with a multiplier effect on the Connecticut economy.
    - narrowing of inter-regional energy cost differentials which now exist by substituting coal/nuclear for oil in the generation of electricity, particularly as the price of natural gas (used much more widely outside of New England) increases with deregulation.

NU 80s/90s should have a broad impact on nearly all major categories of oil used in the state. It will reduce the use of #2 distillate oil for home heating, heavier oils used in apartments and businesses, and the residual oil used by manufacturing industries and electric generating plants. In each category the program should make an impact.

In order to maintain the targeted 1.5 percent or lower electric load growth, we are adding substantially to the number of energy management assistance services being offered to customers. Reinforcing the successful

CONN SAVE home energy audit program, which NU has sponsored from the outset (including the 1979 pilot program which enabled Connecticut to become the first state in the nation to place the Residential Conservation Service (RCS) program in operation), are aerial thermography and interpretative workshops showing heat loss in buildings (available to customers in our more densely-populated municipalities), a service to wrap water heaters and turn down their thermostats, incentive payments for certain conservation measures, audits for commercial/industrial customers and other programs designed to encourage customers to use energy more efficiently.

Our objective is to reduce energy consumption of all types. Because of the prevalence of oil used in the region for space heating and industrial processing, and important result of NU 80s/90s will be to reduce the direct use of oil, in addition to maintaining growth in the use of electricity at 1.5 percent or less.

The purpose of my testimony is to give a report on the current status of the principal elements of NU 80s/90s. After describing the background of the program I will discuss the customer assistance programs in some detail, as considerable progress has been made, and then discuss the plan to reduce the use of oil in our generating plants.

NU has made NU 80s/90s a central part of its institutional purpose and future development. We feel we have been responsive to DPUC concerns and produced a program whose elements fit well together and will result in more economic electricity supply being made available to customers. We request the support of the DPUC for the program and its elements.

(Additional information on the Northeast Utilities Conservation Program was submitted and reviewed for the record as part of Mr. Stern's testimony).

* * * * * * * * * * * * *

ELMER N. STUETZER
5409 Itaska Street
St. Louis, Missouri 63109

Do our nation's private electric public utilities really want "regulatory relief"? The July 1981 settlement of the Union Electric Company rate case demonstrates that this Company has never had it so good as it now has under the jurisdiction of the Missouri Public Service Commission. From beginning to end this entire case was a farcical charade intended to fool the public into believing that the MPSC is consumer-oriented when instead it is really pro-utility.

On November 26, 1980 U.E. filed for a rate increase of $91 million, much more than it knew it really needed. Such a huge sum was decided upon so that the MPSC could later cut it down to give the appearance it was protecting consumers. Then during the period until a public hearing was held on May 28, 1981 the staff of the Commission made a so-called audit of the exhibits prepared by the Company to justify its request for a rate increase. The hearing gave members of the public an opportunity to express their opinions of the U.E. request, thus making them feel that they had some part in holding down the amount granted by the MPSC.

On the very next day after the hearing the Commission staff responded to such public opinions by announcing it could only recommend an increase of between $22 to $26 million. However, a few days later the staff discovered, with the help of the Company, that it had made a mistake and now recommended an increase of between $38 to $42 million. On July 13, 1981 the MPSC announced that it had decided that effective July 17, 1981 Union Electric was entitled to an increase of about $50 million to be followed by an additional increase of about $15 million, possibly as early as August 15, 1981 after it was determined what effect the recent coal-miners' wage increase would have on the company's fuel costs.

May I suggest a much more practical method of granting rate increases to public utilities, i.e., THE ALL-AMERICAN WAY! I use the term ALL-AMERICAN WAY to emphasize it would have to be effective in every state in the union so that one state could not offer lower rates than another in order to entice new business to its state at the expense of the residential customers. Under the ALL-AMERICAN, every consumer, no matter how big or how little would pay exactly the same price for each kWhr of electricity used, no matter what time of day or season of the year. In addition, instead of long, drawn-out rate cases, smaller amounts could be requested more frequently as needed. With a governing board of the utilities peers whose energy costs would soar you can be sure they would not allow any utility to charge too much for its service. Had the ALL-AMERICAN method of rates been in effect at Union Electric Company during the year of 1980 residential user's bills would have been $63 million less, commercial users would have been $29 million less, large industrial users would have had to pay $72 million more, $22 million, and miscellaneous would pay $3 million less.

It would have made no difference to Union Electric as it would still have the $997 million it needed to continue to render its usual good service. It is interesting to note that the recent decision of the MPSC increases rates to residential by 8.5% but to large users only 8.4%. To me, that seems to be the Un-American way!

Note: The attached schedule showing the derviation of my figures may be of interest to you.

Class of Customer	KWHR Sales in Millions	Revenue in Thousands of Dollars	All-American Revenue in Thousand Dollars	Difference in Thousand Dollars
Residential	8446	402,160	339,571	(62,589)
Commercial	6913	306,486	277,937	(28,549)
Industrial	7616	233,854	306,201	72,347
Other Electric Utilities	1435	35,619	57,694	22,075
Miscellaneous	385	18,774	15,490	(3,284)
	24,795	996,893	996,893	

The above exhibit shows in the first three columns the class of customer, kilowatt hour sales in millions, and electric operating revenues in thousands of dollars as shown on page 36 of Union Electric Company's Annual Report for Year 1980. The last two columns show what the operating income, i.e., revenue, would have been and what the difference in such operating revenue would have been had the All-American Way of Electric Utility Rates been in effect in 1980.

The All-American Way charges all customers, from the very largest, to the very smallest, exactly the same price per kilowatt hour, no matter how much or how little is used, or what time of day or night, or season of year, winter or summer. The average KWHR price used in above computations is .040205, arrived at by dividing $996,893 by 24,795 KWHR. So residential customers would have paid $62.5 million less, commercial customers would have paid $28.5 million less.

AMY TIMMER
Energy Extension Service Clearinghouse
P. O. Box 30228
Lansing, Michigan 48909

(This statement was presented by Ms. Timmer to the National Energy Extension Service Advisory Board on May 19, 1981. The title of this presentation was Energy Information Services: Implications for U.S. Energy Policy (A Study Based on the Michigan Energy Extension Service Clearinghouse)).

In cutting federal funding for national energy conservation programs, the Reagan Administration believes that rising energy prices and government tax incentives will adequately encourage people to conserve. Unfortunately, recent history suggests that this simply will not be the case. While it is true that energy consumption has declined as prices have risen, the decline in consumption has not kept pace with the growth of prices. For example, since 1972, the price of natural gas used in Michigan homes has risen 194%; the price of home heating oil, 437%; and the price of electricity, 115%; yet per capita energy consumption in the residential sector has declined only 5% during the same time period. Citizens have made up the difference between their savings and their consumption simply by devoting more of the household budget to energy, individuals and families are exporting billions of dollars each year to pay for imported fuels -- money that could otherwise be used to purchase goods and services within this country. Thus, the free market is working -- but very slowly and at an enormous cost to both consumers and businesses.

In making their decisions about how conservation should be encouraged, the free market theorists do not give sufficient consideration to an important fact: rational economic decision-making relies on an unobstructed flow of information. For the price mechanism to work, people must know how to respond. Unfortunately, not all of our responses can be dictated by common sense. If the price of hamburger goes up, the response is simple: eat less or buy something else. But, if the price of home heating fuel goes up, there are fewer obvious ways to buy less or conserve. Some of the most effective ways to use less energy require us to know a great deal more about our homes than most people know. In other words, people are not managing their energy consumption because they do not know how.

A state-wide survey conducted in 1978 demonstrates this contention. A majority of Michigan citizens polled cited turning out lights as an important conservation action. A minority cited insulating and a very small minority cited weatherstripping as important conservation actions. Although all three actions will save energy, insulating and weatherstripping can save much more than turning out lights. But, because turning out lights is the most obvious way to save energy, this conservation measure is widely practiced, despite the fact that it will not significantly affect utility bills. It is little wonder that American citizens claim to be conserving, yet complain that their energy bills continue to soar. Thus, the need for energy management information is widespread and strong. And, the Michigan experience suggests that it is an essential complement to the efficient operation of the free market.

The Michigan Energy Extension Service Clearinghouse has been addressing the need for energy information since April, 1978 when the Clearinghouse opened the Energy Hotline. The Hotline is a toll-free information service established to help homeowners and other small energy users understand energy use and consumption patterns, and cope with ever-rising energy prices. The Hotline offers technical assistance over the telephone and provides callers with written materials on a wide variety of energy topics. Materials developed by the staff are designed to address the broader aspects of conservation and energy management, while supplying both technical "how-to" instructions on conservation techniques, and financing information. Based on a number of studies of public awareness of energy concepts, and factors which best motivate citizens to conserve, more than 200 different publications have been developed and are now distributed state-wide. This information is used by homeowners, small businesses, local governments, public school teachers, community groups, students, professionals in the energy field, and other state and federal agencies.

The Clearinghouse operation in Michigan collects extensive data on each client, which is used to continually monitor the effectiveness of the program, and to modify the service so that it is most appropriately addressing the needs of the public. It is important to understand that, by definition, an information service must be responsible to public need, since that is its inherent function. If use of such a service falls off dramatically, it is an indication that either the service is not providing appropriate help, or that it is no longer needed. If government is to serve public need in the area of energy information, then, it is useful to look at the trends that have occurred in the Michigan experience. To date, over 65,000 Michigan citizens have made use of the Clearinghouse. The table below shows that the demand for this service continues to increase in weekly phone contacts since the service was made available in 1978.

Number of Citizens Contacting the Michigan Energy Extension Service Information Clearinghouse

	Total	Number Per Week
1978	5,959	119
1979	17,019	327
1980	28,107	541
1981 (through February)	8,410	764

And the trend is expected to continue. In a random survey of over 600 Michigan households conducted in August of 1980, over 80% of the respondents said they could use more information about one or more areas of energy conservation right now. These findings are complemented by those of a nation-wide survey conducted by the Gallup Organization (1980) where it was found that over half of the population still does not know about the federal income tax credit for residential solar installations (financial assistance is often viewed as one of the best incentives for undertaking conservation projects). It is thus apparent that in order for Americans to make wise decisions about energy use, and to be encouraged to take advantage of existing incentives, they must have access to the necessary information.

What, then, is the best channel through which to offer such information? The marketplace has seen the entry of a confusing variety of energy conservation devices, including gas savers, insulation, solar panels, and wind generators (yet another indication of consumer interest in conservation). To sell their products, many companies must first explain energy terminology (such as R-values, BTU's, and thermal storage capacity), and then explain how their product will help the consumer cope with energy costs. Thus, to make an intelligent decision, the consumer must understand: new terms and concepts; technicalities of the product; financing information, including payback periods and resultant savings; objectivity and reliability of information received; comparable products; and alternative options. While private interests may eventually offer all of this information, it is the reliability and objectivity of the information that a consumer will most often question. Approximately one-third of the calls received by Michigan's Energy Hotline concern specific brand-name product information, while the great majority (75%) of all calls are from consumers who are making decisions related to personal conservation investments.

To confirm the need for an objective information service and to determine public preference for the source of that information, Michigan surveyed citizens and asked the open-ended question of where people thought they could get the most believable information about energy. The combined "government" responses (federal, state, and local) were mentioned more frequently than any other source. The next most frequent response was "no one" or "don't know any." Moreover, when the Gallup Organization asked who should "educate and inform" consumers about solar energy, the single most often mentioned source was the federal government. Contrary to the assumption of the new administration, it seems the public is very much in favor of continued government involvement in certain public is very much in favor of continued government involvement in certain public service areas -- in this case, that of energy information dissemination. More importantly, the public seems willing to support such preferences with tax dollars. In a Michigan survey conducted from late February through early May of this year, 79% of respondents agree that "the government should spend a larger portion of its present budget on energy conservation." In contrast, only 31% agree that "government should stay out of the picture and let the free market find the best solution to our energy problem."

A criticism now being leveled against the information produced and distributed by the U.S. DOE maintains that the department is biased in favor of decentralized alternative energy approaches and against more traditional central station energy sources (House Subcommittee on Energy Research and Production report entitled, "The Department of Energy's Public Information Programs: Major Changes Needed"). Because of this criticism, a review of certain DOE publications is currently being conducted, and states are unable to obtain quantitites of those materials for distribution to the public until that review is complete. Not only has this created an inconvenience for state information services, but the criticisms which led to this action are misleading. Much of the DOE public information is distributed to consumers who are making very decentralized energy decisions. The criticism that DOE does not adequately promote central station energy sources ignores the fact that the public in general has little to do with such decisions. Conservation and renewable energy options require individual-level awareness and information in order to be implemented.

The experience in Michigan provides the kind of data upon which to base decisions that will determine the scope of an information service. It is consumer demand that should dictate the types of materials produced by a government information service. Below is a table based on the first 40,000 citizens requesting information from the EES Clearinghouse between mid-1978 and mid-1980.

Percentage of Citizen Requests
For Information by Category

Conservation	54%
Solar energy	12%
Other renwable sources (e.g. wood, wind, biomass)	13%
All electrical generation	3%
Nuclear energy	1%
Fossil fuels	1%
Other Miscellaneous	16%
	100%

As the table clearly indicates, consumer preference is overwhelmingly for conservation and renewable technologies information. More than ten times as many requests for solar energy information have been received than for either nuclear or fossil fuel information. Futhermore, conservation, solar, and other renewable energy sources, together account for over three quarters of all energy information requested. (Note: Since August, 1980, where the table above left off, customer requests have been even slightly more in favor of solar and conservation.) The implications for national energy policy are obvious: the public desires, and is actively using, information that will help them reduce energy consumption. If information services prove to be cost-effective in helping keep down energy expenditures, they should be maintained and expanded. Thus, the costs of such services must be explored in relation to their impact on energy consumption.

The Michigan EES integrates an extensive evaluation component into every aspect of the program. Every person who contacts the Clearinghouse is surveyed to determine satisfaction with the service, and conservation actions taken as a result of information received. Conservation actions are translated into BTU savings and then into dollar savings. The table below shows program costs and savings.

	EES Dollars Spent	Client Dollars Saved	Dollars Saved per $ Spent
1978	$ 83,981	$ 283,332	$3.37
1979	155,081	866,029	5.58
1980	174,609	1,522,432	8.72

The Information Clearinghouse has in effect, more than paid for itself with energy savings in every year of operation. In 1980 alone, almost $9.00 were saved for every dollar spent to operate the program. This is of special significance to the economy of Michigan, as 85% of our energy must be imported into the state. From a national perspective, this kind of productivity could be invaluable in helping to solve the energy problem. A balanced energy program cannot afford to ignore such contributions.

Finally, it is interesting to note that the Michigan Clearinghouse has promoted these savings while maintaining high ratings from clients in a variety of service areas.

Clearinghouse Patron Feedback

74.5% of Clearinghouse materials are rated as 80-100% of what the patron wanted.
67.1% of Clearinghouse patrons take action to conserve energy after contact with the Clearinghouse.
79% of Clearinghouse patrons rate the service as completely informative
82.9% of Clearinghouse clients are making their first contact with the service.

The program has consistently maintained these ratings for three years. The national Energy Extension Service program began as an experiment in grass roots energy conservation -- the intention being to use government only as an impetus to helping consumers realize energy savings in their personal consumption habits. Without employing any regulatioins -- relying solely on the benefits of education and consumer incentives to save money -- the Energy Extension Service program has done precisely that. The service has not only helped hundreds of thousands of Americans understand the nature of our energy crisis, but has provided them with the kind of information necessary to promote active conservation of scarce resources and increased use of renewable resources. But more importantly, the experience and accumulated knowledge offers the Reagan administration an option - to avoid government interference in the marketplace; to avoid increased use of fuels that cannot last or are not proven safe to our environment; to avoid sending billions of dollars out of our country each year. That option is to educate the public, to provide a cost-effective and highly needed information service that has proven its worth in our efforts to combat the energy crisis.

MARGARET WALKER
Director, Arizona Energy Office
Office of Economic Planning and Development
1700 West Washington
Phoenix, Arizona 85007

The EPA Section 11 requirements provide a good opportunity for impartial review of the U.S. Department of Energy (DOE) programs. It is important to remember that this is not just a required exercise but a useful tool to allow constructive comments for DOE programs and policies. The comments that resulted from the 1980 Section 11 review were thoughtful and, in our view, reflect the value of the energy conservation programs administered by DOE. It is regrettable that the programs are being abandoned at a time when they are just beginning to bear fruit. In this testimony, I intend to review the successes of the DOE conservation programs in Arizona, and then respond to the altered approach of this Administration.

THE ARIZONA ENERGY STORY

The Arizona Energy Office has received federal funds since 1974 when it was established with Federal encouragement. Since 1974, our programs have expanded as the federal and state role in energy conservation grew. We administer federal funds for the State Energy Conservation Program (SECP), Energy Extension Service (EES), Emergency Energy Conservation Act (EECA), Residential Conservation Service (RCS), Institutional Conservation Program (ICP), and Weatherization Assistance Program. In all, direct federal funds, excluding pass throughs, amount to $700,000 or about 60% of our budget. The Arizona Legislature has recognized the needs in Arizona and has supported the office with the additional 40% of our budget.

It might be useful to review the extent of the energy problem in Arizona:

- o Arizona is particularly vulnerable to oil interruptions since we produce and refine very little petroleum.
- o Arizona households spend $2.7 billion in direct energy costs for residential and transportation uses:
  - -- $1810 per household for gasoline
  - -- $1257 per household for electricity and gas
- o Transportation represents 36% of all energy used (against a national average of 25%) despite a reduction from 1.41 billion gallons in 1979 to 1.36 in 1980.

Arizonans have responded well to calls for conservation. They are eager to learn how to go about saving energy in their homes, cars and businesses. Our programs are designed to help Arizonans find reliable information and complete effective measures. The following represents some of the activities, successes and potential of the state energy office:

- The Governor appointed a Building Standards Advisory Committee which produced a thoughtful Arizona Guidelines for Energy Conservation in New Building Construction. With an estimated 43% of Arizona's energy consumption used in buildings, a savings of just 20% is equal to the energy to be produced annually by the three Palo Verde Nuclear units, 3750 megawatts.

- The Weatherization Assistance Program has insulated and improved 3281 homes in Arizona. If each of these averaged a 35% reduction in space heating, which it is estimated to do, we would save $143,000 a year in utility bills for those low income and elderly residents. As utility costs continue to rise, that would save millions of dollars over the lifetime of the houses.

- Driver Energy Conservation Awareness Training (DECAT) can save 20% of our gasoline consumption. In the first year of the program, 3000 Arizonans will be trained with a savings of 1.1 million gallons of gasoline or over one and a half million dollars for those drivers. Particularly valuable will be training diesel fleet drivers and high school driver education classes.

- Three hundred forty-seven schools, hospitals and local government buildings in Arizona received $1.1 million dollars to improve the the energy efficiency under the Institutional Conservation Program. As an example, a hydronic economizer was installed at the University of Arizona which can offset 87% of the campus cooling load.

- Conservation Road Shows have been given to over 1000 Arizonans from Williams to Willcox. At even a modest figure of 5% performing some energy conserving measures as a result of these programs, the savings will be equivalent to all the energy a family needs to power its vehicles for a lifetime.

- The proposed Residential Conservation Services (RCS) would provide on-site energy audits for Arizona homeowners. It is estimated that a resident who takes a minimum action on the recommendations of the RCS audit can reduce energy use by 22%. If just 6% request an audit and half of them take some action, the estimated annual energy savings is 43,000 barrels of oil equivalent. That would represent $1.8 million in Arizona alone.

- One third of Arizona's cities and towns are participating in the Energy Conscious Community Award program to recognize local energy activity and provide a delivery mechanism for our energy programs. Communities can win a Governor's Award of Excellence, Merit or Participation by demonstrating success in a number of energy conservation and solar projects.

- As a result of the Arizona Energy Office, at least 23 trillion Btus were saved in two years.

- This much energy in the form of gasoline would supply the fuel for a third of a million small cars for a full year.
- This much energy would supply all of the energy needs of 144,000 typical Arizona homes for a full year.
- This much energy is equivalent to 3.8 million barrels of oil or $159 million.

It is clear that we support the retention of federal funding for state energy offices. That expenditure provides offices around the country familiar with energy solutions and it allows states to focus on the particular needs of the citizens in that state. Arizona is an especially good example of the need for local focus. Among other characteristics, we have unique construction with flat roof houses and evaporative coolers, enormous climate diversity, and we have carefully guarded local home rule. The state and local conservation grant program that funds these 50 state energy offices was $336 million. That is only 2% of the DOE budget and one-tenth of the Strategic Petroleum Reserve.

EFFECTS OF NEP III

With a total reliance on the free market economics of the Third National Energy Plan, most of the successes Arizona has forged will be removed. Useful cost-effective programs will not be offered because the funding will be removed. Although we recognize the value of a fundamental review to examine what works and what doesn't work as a result of federal funding, we strongly suggest we have demonstrated the value of DOE conservation and renewable funding.

The rising price pressures that have resulted from the free market economics will give Arizonans the motivation to conserve but not the means. People need reliable, available information to understand which measures are most cost-effective. Larger corporations with staffs of engineers can make those calculations but the average homeowner has great difficulty in deciding whether it is cost-effective to install R-30 or R-19 insulation or which appliance has the most favorable life cycle cost.

These are economies of scale that can result from federally funded appliance labelling programs, energy efficient building code recommendations, passive solar building technologies, and on and on. In a similar way, it makes sense to have one state energy office to assist local government leaders and energy users make energy decisions based on reliable information. Economies of scale are being lost by the new approach.

RESPONSES TO SECTION 11 REVIEW QUESTIONS

1. "How are private firms, state governments and local agencies preparing to assume their new responsibilities?"

   There is little indication that these groups recognize that they must assume new responsibilities. You make the assumption that because the federal government is dropping its role in conservation and renewable programs, these groups are expected to pick them up. On the contrary, there is a strong belief that the intended dismantling of DOE means there is no energy problem, therefore no need to assume new responsibilities. Leadership and authoritative sense of direction is needed to assist us in explaining there is a critical role to be played in conservation and renewables.

2. "Which activities will get priority from public and private organizations and what will be the consequences if some activities are discontinued?"

   Keep in mind that federal budgets which call for no support for state energy offices, will mean the end of a substantial number of the successes we enumerated earlier. Consequences will be uninformed citizens who pay more than they need to in energy costs, less efficient buildings and fleets with reduced productivity, ever increasing consumption at higher prices that will fuel not only inflation in geometric proportions, but bring greater declines in economic output as fossil fuels are harder to retrieve.

3. "Have any new initiatives or opportunities been created as a result of the shift in Federal energy conservation programs?"

   Those that appear likely will end when state energy offices close. Private sector conservation initiatives can be inconsistent, unreliable, unmonitored and unenthusiastic. Because profit-centered firms need to see fast paybacks it is questionable how fundamental research necessary for renewables will be continued.

4. "What is the Federal government's proper role in this period of transition?"

   - Leadership. The Federal government must explain that exponential growth of energy consumption is impossible to sustain and recognize that capital formation costs for expanding production facilities is an increasing drain on the economy. It must recognize and support conservation and renewables as appropriate answers in a transition from fossil fuels.

   - Equity. The enormous federal support for fossil fuel exploration and production, for nuclear fuel research and disposal must be balanced with an equal emphasis on other forms of energy production. The subsidies for existing fossil and nuclear production must be recognized and made part of the real cost of producing these fuels. If similar support were given conservation and solar during this transition, the investment would be less and the long-term results greater.

   - Information. Americans need reliable information on measures to take. As we make the transition to higher prices, people must be given the appropriate tools to protect themselves from these prices.

5. "How should the Federal government evaluate and monitor the effects of its new energy policies and program changes?"

   For example, U535 would be extended to demonstrate Btu savings. A new tool would be examining numbers of people on low income assistance resulting from energy bills. Numbers of small businesses bankruptcies could be calculated.

SUMMARY

Existing DOE conservation and renewable programs need a chance to achieve their full successes. A weeding out process has produced effective programs that should be continued. True market energy economics cannot be the sole policy since Americans need reliable energy information and assistance.

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MR. JETER M. WATSON
The Conservation Council of Virginia
Route 3, Box 647-A
Ashland, Virginia 23005

The Conservation Council of Virginia is a coalition of 38 membership groups representing a broad spectrum of environmental interests, joined together by a common commitment to the conservation of those resources which result in maintenance and improvement of a healthy environment. As such, the Council is extremely interested in energy use, particularly the efficient use of energy through conservation measures, which we (in agreement with the Harvard Business School Energy Project) consider to be the most important and readily available energy source for a continuing healthy economy.

The Administration's emphasis on increased production seems to be based on two erroneous assumptions concerning energy conservation: First, that conservation means a lowering of personal standards of living (implied in the Notice of Public Hearings and Staff Working Paper, p. 10-11) and, second, that market forces will bring about desired conservation goals regardless of government energy policy (Id., p. 2, 6, 9, 11).

Where the first assumption is concerned, (i.e., energy conservation means lower standards of living) the Administration seems to be fixated on a narrow definition of conservation merely as curtailment of use (i.e., of "doing without"). But energy conservation is far more than that. In the sense that we are advocating it, energy conservation means adjustment of use (i.e., of cutting out waste by improving efficiency). Studies of the energy/GNP relationships of the United States and a number of European countries have indicated that, given a serious commitment to energy conservation, this country could reasonably expect to achieve a 30 to 40 percent energy saving without any standard of living loss and, more probably, with a resulting higher standard of living, when the reduction of energy-use induced environmental dislocations is considered. In short, current waste within the system will permit conservation to do more with less.

Where the Administration's second assumption is concerned (i.e., the inevitability of energy conservation through pricing in the free market) it should be pointed out that proposed federal subsidies for high cost, high technology energy systems will inevitably erode the price induced energy conservation we have experienced at various times since 1973 by placing these high cost alternatives on a more favorable institutional footing.

Were the government actually "not to select and promote favored sources of energy", as is proposed in guiding principle three (Working Paper, p. 10), then pricing alone might, indeed, bring about the energy conservation, in the form of "not wasting the Nation's resources" (Working Paper, p. 10), to which the Administration does not appear hostile. Unfortunately, the Working Paper immediately contradicts guiding principle three by proposing, in guiding principle five, to subsidize high cost, high technology energy systems, subsidies which will, in a very real way, "select and promote (the) favored sources of energy," decried in guiding principle three.

Such high technology subsidies by the Administration will, in our opinion, heighten the energy waste which renders our economy increasingly non-competitive with those of other, more efficient countries. Greater inefficiency will result from the high intermediate to end-use energy characteristics of the favored, subsidized energy systems and from the erosion of price-induced conservation gained so far, as these new technologies use up and replace existing technologies.

Additional benefits accrue to the energy conservation approach. Energy conservation is a virtually pollution free energy source. It does not tear up the land, nor create boom and bust economies, nor pollute or otherwise use up waste quantities of water, nor affect air quality or climate, and, most importantly, it does not involve the long lead times and inflexibility of the high cost, high technology systems.

The Administration's Working Paper alludes to these disadvantages of the high technology solutions, but dismisses them being results of successes in other areas of improvement or as being too distant in time to worry about. Far more attention should be paid to these disadvantages. The combustion products of increased coal usage are of concern, both because of direct health effects of air contaminants and because of the more indirect problem of acid rain. The competition for water of these high cost, high technology energy systems with existing uses of water, especially in the more arid west, may be severely limiting both economically and environmentally. The characterization of possible climatic effects as too remote to warrant concern (i.e. in the next century) is inappropriate on three counts. In the first place, it is irresponsible to put off such a problem so callously on a generation unborn. In the second place, many of us in this room hope to live well into the next century. Finally, there is a body of evidence stemming from the climatological research of people such as Reid Bryson to suggest that man induced climatic effects are already being experienced without the presence of the large scale technologies which the Administration proposes to subsidize.

We therefore urge you to consider and support both the economic and the environmental benefits of strong government support for energy conservation initiatives which will benefit all the people, rather than the economic benefits which will accrue to only a few, while the economic and environmental costs are borne by many if the high cost, high technology energy systems are subsidized at the expense of conservation and renewable energy resource programs.

Thank you for this opportunity to present our views.

MEMBER ORGANIZATIONS OF CONSERVATION COUNCIL OF VIRGINIA

1. ASSOCIATION FOR THE PRESERVATION OF VIRGINIA ANTIQUITIES
2. AUDUBON NATURALIST SOCIETY OF THE CENTRAL AMERICAN STATES
3. CANOE CRUISERS ASSOCIATION
4. C.A.R.E. CHAPTER OF THE CHESAPEAKE BAY FOUNDATION
5. CITIZENS COMMITTEE FOR VIRGINIA STATE PARKS
6. CITIZENS ENVIRONMENTAL COUNCIL OF THE ROANOKE AREA
7. CITIZENS PROGRAM FOR THE CHESAPEAKE BAY
8. COMMITTEE TO PRESERVE ASSATEAGUE ISLAND
9. THE GARDEN CLUB OF VIRGINIA
10. HANOVER CITIZENS FOR SENSIBLE GROWTH
11. IZAAK WALTON LEAGUE OF AMERICA, VIRGINIA DIVISION
12. KING GEORGE ENVIRONMENTAL ASSOCIATION
13. LEAGUE OF WOMEN VOTERS OF VIRGINIA
14. LOWER JAMES RIVER ASSOCIATION
15. NORTHERN SHENANDOAH VALLEY CHAPTER OF THE NATIONAL AUDUBON SOCIETY
16. NORTHERN VIRGINIA CONSERVATION COUNCIL
17. OLD DOMINION CHAPTER OF THE SIERRA CLUB

18. PIEDMONT ENVIRONMENTAL COUNCIL
19. POTOMAC APPALACHIAN TRAIL CLUB
20. RAPPAHANNOCK LEAGUE FOR ENVIRONMENTAL PROTECTION
21. RECLAIM THE JAMES
22. RICHMOND CHAPTER OF THE NATIONAL AUDUBON SOCIETY
23. RICHMOND SCENIC JAMES COUNCIL
24. RURAL POINT CONCERNED CITIZENS ASSOCIATION
25. SOCIETY OF AMERICAN FORESTERS, APPALACHIAN SECTION
26. TROUT UNLIMITED, VIRGINIA COUNCIL
27. VIRGINIA ANGLERS' CLUB
28. VIRGINIA B. A. S. S. FEDERATION
29. VIRGINIA BEACH CHAPTER OF THE NATIONAL AUDUBON SOCIETY
30. VIRGINIA CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS
31. VIRGINIA CITIZENS FOR BETTER RECLAMATION
32. VIRGINIA FEDERATION OF GARDEN CLUBS
33. VIRGINIA FEDERATION OF HUMANE SOCIETIES
34. VIRGINIA REGION OF NATIONAL SPELEOLOGICAL SOCIETY
35. VIRGINIA SOCIETY OF AMERICAN INSTITUTE OF ARCHITECTS
36. VIRGINIA SOCIETY OF ORNITHOLOGY
37. VIRGINIA WILDERNESS COMMITTEE
38. YORK CHAPTER OF THE CHESAPEAKE BAY FOUNDATION

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JUNE WILLIAMS
Manager, State Energy Conservation Plan
Department of Energy and Transportation
Watkins Building, 510 George Street
Jackson, Mississippi 39202

The following comments should be entered as testimony for the Environmental Protection Agency Section 11 hearings.

The Energy Division of the Mississippi Department of Energy and Transportation takes the stance that conservation through high prices in the free market alone cannot meet the energy conservation goals for Mississippi. Conservation efforts of MDET center around the ideas of not only reducing or at least stabilizing energy demand, but of utilizing present demand in the most efficient manner. Peak energy efficiency is a major factor in leveling off the costs of energy.

Large businesses and industries with heavy amounts of investment capital have the flexibility to undertake major retrofitting projects to attain maximum energy efficiency in plant operations. These firms are also more likely to have on staff a person whose major function it is to seek out and take advantage of opportunities to conserve energy.

But what about those businesses and industries which are struggling to remain in the market? Without encouragement and technical assistance from the governmental sector, these firms will take the alternative of continually passing on rising energy costs to consumers.

Adoption of energy efficient management practices today will most certainly impact upon future energy needs. The MDET Energy Division will continue to encourage energy conservation by providing energy management technical assistance and training.

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RALPH WILLMER
Somerville, Cambridge Economic
Opportunity Committee, Inc.
Somerville, Massachusetts

My name is Ralph Willmer, and I am the Project Director of the Energy Consumer Education Program at the Somerville, Cambridge Economic Opportunity Committee, Inc. (SCEOC). SCEOC is the local Community Action Agency which serves the cities and towns of Somerville, Cambridge, Belmont, Watertown, Arlington and Lexington in Massachusetts near Boston. As part of our program, we conduct workshops on low cost/no cost weatherization and utility rights. We have also written manuals on these subjects.

The purpose of my testimony is to express my concern over the direction that federal energy conservation programs are headed. I will address several different issues including the need for the continued federal role in weatherization programs, the impact of the proposed federal policy in Massachusetts, its effect on the low-income population and the problems of shifting programs from one agency to another.

For the past several years, the federal government has sponsored weatherization programs which target low-income neighborhoods. This program has been run by several different agencies during this time period. Programs such as these provide vital services, which should not be overlooked. The situation in our service area is typical of many cities within the New England region. The city of Somerville has a relatively high proportion of low-income people. According to a recent survey done in the city (Initial Energy Inventory Report Citizen's Energy Advisory Committee) over 90% of the city's housing stock was built prior to 1939. Multi-family structures comprise 90% of all city residences. There is a 2 to 1 ratio of renters to homeowners in the city. The survey also showed that 85% of these homes were inadequately insulated and 75% of all homes lacked any insulation at all, Furnace efficiencies were also low - the average efficiency for all housing types was only 71%. Oil is the predominant heating source.

The scenario described by these statistics is a particularly dismal one. Low income people who are most vulnerable to the upsurge in oil prices are the ones who are living in homes that burn the largest volume of fuel. Landlords have no incentive to tighten up these homes, whether they pay the utilities or not. Since the housing stock is so old, and poorly insulated, many of these homes are costing consumers hundreds of dollars a year in wasted energy. Weatherization programs, sponsored by the federal government, have begun to improve this situation. Many of these people also receive some fuel assistance money in addition to the weatherization kits. However, funding the fuel assistance program is really only a band aid approach to the problem. Through continued weatherization, we can begin to make homes more energy efficient and therefore decrease reliance on fuel assistance to pull people through the winter.

In general, energy conservation should be the crux of any sound rational energy policy. Throughout the issue paper written for the National Energy Plan III hearings, the point was made that America's dependency on foreign energy supplies leaves us in a vulnerable position. Energy conservation should play a vital role in reducing our dependency on imports. Since it is economical and the technology is already developed, there is a very important role that the federal government should play. To ignore this or pass the responsibility down to the states and localities is shortsighted at best.

Massachusetts is facing an additional obstacle to maintaining and expanding its own weatherization programs. In November 1980, the voters approved a sweeping tax reform measure known as Proposition 2 1/2; which essentially limits the amount of property and auto excise tax to 2 1/2% of the value of the taxed item. In its first year of implementation it is expected to reduce city and town revenues by anywhere from $480-$565 million. The state, in turn, has increased its local aid package to accommodate approximately half of that loss. All in all, it appears that any new revenue on either the state or local level will be used to rehire laid off police and fire personnel and teachers, as opposed to developing new programs. This is coupled with the anticipated cutback in various federal funds, including the zero level budgets for weatherization and the State Energy Corservation Program.

The Administration's proposal places more of the responsibility for weatherization services on local agencies and organizations as well as the private sector. I see a couple of drawbacks to this type of plan. First of all, utility companies have thus far been reluctant to enter into the conservation business. The Residential Conservation Service, set up through legislative efforts, begins to get utilities into conservation. The utilities offer energy audits, appraisals, contractor referrals and financial information. However, this program does not really benefit those who cannot afford to insulate and weatherize their homes, nor does it help low-income people who may not be as credit worthy as more affluent people. Other members of the private sector also cannot fill this void. Energy Secretary James Edwards would like to see the free market forces encourage conservation by forcing people to conserve as prices continue to rise to the world level. This policy can only serve to the detriment of low-income people who cannot bear the brunt of these increases.

In any case, efforts should be made to continue weatherization programs that will help low-income people reduce their heating bills and the resulting large utility arrearages and terminations. The most effective structure for operating these programs have been through the Community Action Agencies. They have been running a variety of different weatherization projects for a number of years. They are equipped with the knowledge of the local community's people and their needs; much more so than state wide organizations would. Over the years they have developed the resources and expertise to effectively manage projects and educate citizens about weatherization. These programs have been operated in conjunction with many other local organizations, which service a more specialized clientele within the community. Should the CAA's be phased out by the state government, other local agencies would probably be able to pick up the programs. In some cases, the municipalities have also established programs of their own. Only with close coordination between each party will a successful transfer of responsibilities occur. However, once again, Proposition 2 1/2 will hinder the ability of the municipalities to play any major role in weatherization, even if some block grant money filters down to them.

The optimal weatherization program would be a combination of home improvements that would include larger investments in insulation, particularly attic insulation, and low cost weatherization. This is important because in order to maximize the cost-effectiveness of the conservation improvements, both approaches must be used. A house that has been insulated but has not had its doors and windows weatherized, is still going to leak and cost the occupant money. Conversely, a home that lacks insulation will still be inefficient. Obviously, it is necessary to do at least the minimal weatherization, but a combination of that with some insulation will produce the best results. In addition, some programs have also included tune ups of inefficient furnaces. This is important because an inefficient furnace will cost tremendous amounts of money and waste energy even if the home is fully insulated.

To summarize, I feel it is imperative that the federal government continue to play a major role in energy conservation programs. Our agency has weatherized several thousand homes and apartments over the last few years, which has helped many low income families meet their utility obligations. A cutback in federal funds will place these programs in jeopardy and due to the fiscal condition of Massachusetts, it is uncertain as to whether or not the state can pick up weatherization projects. Agencies on the community level are best equipped to operate the program. I hope that they will continue to have the opportunity to do so. Thank you.

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HARRY WUERTENBAECHER, JR.
Vice President - Customer Service
Union Electric Company
1901 Gratiot Street
P. O. Box 149
St. Louis, Missouri 63166

Union Electric Company is an investor owned utility which supplies electric service to approximately 700,000 residential customers in the State of Missouri and adjacent areas in the States of Illinois and Iowa. We are submitting this testimony in an effort to communicate our concerns over past actions of the federal government in the area of energy conservation. We hope that future governmental actions will rescind past programs which slect and promote favored sources of energy (Building Energy Performance Standards) and mandate utility provided on-site audits of customers' premises (Residential and Commercial and Apartment Conservation Service Programs).

GENERAL PHILOSOPHY

We support the President's Program for Economic Recovery and the broad concepts of reducing growth in Federal spending and minimizing the costly burden of regulation on the private sector.

The involvement of the Federal government in energy conservation was an improper response to its previous erroneous policy of fuel price regulation. The imposition of price controls on natural gas and oil, which regulated the consumer costs of these fuels below their true market value, which disrupted the cost-benefit balance between energy use and conservation. This in turn led our citizens to choose big and powerful automobiles rather than small and efficient ones. Similarly, home buyers chose additional square footage in lieu of better insulation and storm sash in the new home market.

The proper response to the fuel crisis which became evident in 1973-74 should have been to remove all price controls. Instead, government opted for a gradual removal and imposed costly and ineffective regulations in energy conservation and efficiency standards, all adding to regulatory burdens, more federal involvement ad increased federal budgets. To correct the situation we must change our course to that outlined by present administrative policy.

PAST AND CURRENT NON-MANDATED CONSERVATION ACTIVITIES OF UNION ELECTRIC COMPANY

Our efforts on behalf of energy conservation in residences began in 1954 and have not ceased in the ensuing 27 years. Our original construction and insulation standards resulted in at least 70,000 dwelling units being constructed with R-24 insulation in ceilings, R-15 insulation in walls, with dual glazed windows and storm doors throughout.

In 1977, Union Electric began a program whereby we stimulated the installation of ceiling insulation to a level of R-30 in existing residences of our customers. This was accomplished through the existing marketing structure of insulation suppliers and installers with the opportunity for our customers to pay for the installation on their monthly electric service bill at prevailing interest rates. Insulation contractors participating in the program made more than 38,000 installations of this type in homes of our customers in the period between January 24, 1977 and June 30, 1981.

We support the National Energy Watch Program of the Edison Electric Institute and more than 1,900 of our customers have improved the thermal performance of their homes and as a result have become members of this activity.

In 1976 Union Electric initiated a marketing and advertising program educating our customers on the benefits of proper maintenance of air conditioners and the value of purchasing new equipment with higher Energy Efficiency Ratios. We are still actively pursuing this program.

We also are actively engaged in tests of active and passive solar heating systems, heat pumps, solar water heaters, super insulated homes, solar shielding of homes and electric vehicles. All these hold future promise in the area of energy conservation.

Our past and present programs were developed on the basis of their cost-effectiveness to our customers and represent a practical approach to energy conservation in our area.

FUTURE CONSERVATION ACTIVITIES OF UNION ELECTRIC COMPANY WHICH EXEMPLIFY HOW A PRIVATE FIRM IS ASSUMING ADDITIONAL RESPONSIBILITIES WHICH WILL ALLOW FEDERAL GOVERNMENT TO WITHDRAW MANDATED UTILITY PROGRAMS

As part of our July 17, 1981 rate case settlement, the Missouri Public Service Commission allowed Union Electric Company to remove the prevailing market interest rate requirement from its insulation financing program. We now will finance the installation of R-30 insulation in the attics of our customers (and allow caulking, weather stripping, side wall insulation, storm sash and storm doors to be included along with the ceiling insulation) at an effective annual interest rate of 5%. These thermal improvement items are the most cost-effective conservation measures our customers can install in their homes. The below market interest rate is a tremendous incentive to any customer who lives in a poorly insulated home and views his rising natural gas, propane or oil heating costs as an ever increasing financial burden.

A SUGGESTION FOR LOW INCOME WEATHERIZATION PROGRAMS

Subsidizing energy costs supports the continuing waste of energy. If gasoline stations were to provide certain people with free gasoline, these people would make no effort to drive less or to drive fuel efficient automobiles.

Admittedly, we are in an era of rapidly increasing energy costs, but this is little different from price changes in or the availability of other necessities such as food, clothing and shelter. People have always adopted to these changes by using less or switching to other items or other methods. In fact, it is important that people do this, otherwise the supply segment of the market receives false signals and does not position itself for the inevitable future.

Efficiency in structures and devices can only be improved to a limited point. After that, the cost of operation must be manipulated by the user through some form of limited use. Subsidies do not limit use but the lack of a subsidy does.

Making structures energy efficient is a worthwhile and necessary goal. This is especially true where the disadvantaged do not own the structure in which they live. But improved thermal efficiency will only delay the need to limit use ... not prevent it.

The following table gives a rough indication of annual heating costs in St. Louis, Missouri for a poorly insulated home (60 BTU/sq.ft.) and a well insulated home (30 BTU/sq. ft.) for the past, present and future. Future costs are based upon the projections of Chase Econometrics, and Mellon Institute.

	1970		1980		1990	
	Poor	Good	Poor	Good	Poor	Good
Natural Gas Furnace	$155	$ 77	$775	$386	$4,400	$2,200
Add-On H.P. to N.G.	NA	NA	585	293	2,200	1,100
Electric Heat Pump	NA	NA	445	223	1,180	590

	1970		1980		1990	
	Poor	Good	Poor	Good	Poor	Good
Electric Furnace	280	140	840	418	2,200	1,100

It is obvious from the above that compounded increases in energy costs soon outpace the excellent effect of thermal improvement.

Sooner or later both the "advantaged" and "disadvantaged" will be looking for ways to cut their energy costs, even though their structures have been improved in thermal efficiency. Dressing for lower inside temperature settings during the winter (even lower at night) and the zoning of the house into smaller comfort zones will be practiced by most of our population. We may see the use of insulation in interior walls and floors to make these comfort zones more efficient.

We suggest a new approach to low income weatherization containing the following three linking elements:

1. Provide weatherization for the structure.

2. Deny future energy use subsidies for the weatherized structure.

3. Teach energy limiting practices to the occupants of the structure.

We recognize that a small percentage of our population is incapable of earning enough money to cover their basic needs for food, clothing and shelter, and will still require aid through government assistance programs.

WE URGE THE REPEAL OF ALL FEDERAL PROGRAMS WHICH PROMOTE FAVORED SOURCES OF ENERGY AND MANDATE UTILITY ACTION

REPEAL BUILDING ENERGY PERFORMANCE STANDARDS

This program unfairly burdens an electric heating system with an efficiency calculation unrelated to the building and related to the efficiency of electrical generators. Union Electric Company generates 99% of its electricity from burning coal and using water power. We are constructing a nuclear plant. Any law or regulation which unfairly augers against electric heating forces the use of fuels which are either in short supply or the availability of which is subject to the political whims of foreign interests.

REPEAL THE RESIDENTIAL AND COMMERCIAL AND APARTMENT CONSERVATION SERVICE PROGRAMS

These programs place Union Electric into the decision-making process which heretofore was exclusively between our customers and their selected contractor. It further forces us to give our customers estimates of dollar savings due to thermal improvements they may make and forces us to inspect those installations. Inspection of installations on the customer's side of the meter has historically been the responsibility of local governmental inspection authorities which are generally immune from responsibility arising from the inspection of a defective product.

We believe these programs are detrimental to our customer relations and are non-cost-effective. Money spent on audits achieves nothing unless the customer takes some conservation action. Actions taken by audited customers do not exceed those taken by unaudited customers. To begin these programs, and burden our rate payers with costs related to unjustified results is a tremendous mistake.

WE URGE THE FEDERAL GOVERNMENT TO REDUCE ITS INVOLVEMENT IN ENERGY CONSERVATION

Allowing the free market to work and giving our citizens correct price signals are resulting in increased energy conservation. Citizens will continue to respond to these signals so long as the government does not manipulate one side of supply and demand or one segment of the energy marketing industry.

The cost of studies, hearings and evaluations are all part of the waste in federal spending which our country can no longer afford. We question the need for the Department of Energy, the Federal Trade Commission and the Environmental Protection Agency to each conduct hearings under federal laws dealing essentially with the same subject of energy conservation.

Since none of the government's previous energy conservation programs can be shown to have achieved any significant results, little is gained by questioning which programs should be retained or changed.

WE URGE THE FEDERAL GOVERNMENT TO ESTABLISH A LONG-RANGE CONSISTENT ENERGY POLICY

Private industry and private investors cannot develop energy production and delivery systems under government policies which vacillate from one year, or from one administration, to the next. Above all, we should set our nation on a long-range consistent energy course. Development of coal mines and construction of coal or nuclear power plants require five to fifteen years from planning to production. If the government is free to change the rules and place such energy investments in jeopardy through changing policies, private investors cannot undertake necessary energy projects which are so vital to our national interest.

We thank the Environmental Protection Agency for this opportunity to express our views regarding energy conservation and energy policy in general.

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